

# MINNESOTA MEDICINE

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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Volume 20

September, 1937

Number 9

## THE DOCTOR LOOKS AT SOCIAL SECURITY\*

MAXWELL LICK, M.D.

*Erie, Pennsylvania*

I REGARD it a signal honor to be invited to address the Medical Society of the State of Minnesota. At this time I should like to extend to you cordial greetings from the Medical Society of the State of Pennsylvania, which I have the privilege of representing.

Would that it were given me today to carry before you a fiery cross! Would that it were given me wisdom to solve some of the perplexing problems that confront the Medical Fraternity! If you find nothing of constructive thought in what I present to you, perhaps you may catch some inspiration that will help us all hold steadfast and faithful to the ideals and traditions of medicine. If this be true, then I shall have accomplished all that lies within my ability.

Health has become a ruling passion. It is a word with which to conjure. Sickness used to be an episode which concerned the patient, the relatives, and the family physician. Now it has the solicitude and surveillance of the economist, the philanthropist, and the politician.

### Increase of Public Interest in Health

The public has become hysterical with repeated journalistic and radio impacts; much of it senseless, worthless, reasonless advice on how to attain health and prevent sickness. Millions of radios daily blare forth the necessity of this and that "vitalized" remedy. Papers and magazines blatantly expound the merits of one medicine after another. Cults, with their laying-on of hands and electrical gadgets, predict restoration of youthful vigor. Physical culturists, with their bulging muscles, prophesy charm and renewed vitality. Diet faddists herald a fresh hope to the weary with their unscientific combinations of food. One oracle after another rises up with

heteroscopic divinations of that for which Ponce de Leon sought. Now the economists, the philanthropists, and the politicians have taken up the cry. This insensate, frenzied emphasis on health has confused the lay-mind and resulted in much unintelligence, because emphasis has been laid on spectacular and unimportant details. It is a psychological law that uncontrolled thought and emphasis may result in obsession. Perspective may be lost.

### Unemphasized Health Factors

"As manna fell upon the Israelites in their wanderings through the wilderness, so does good health and sickness, in spite of laws, rules, and regulations, fall inexorably upon the just and unjust alike." Granting the beneficence of preventive medicine, hygiene, and sanitation, the greatest single factor of good health and longevity lies in tissue resistance. It is that ill-defined something which was given to us by our progenitors.

It is an inescapable fact that many are predestined to diabetes, pneumonia, cancer, mental and cardiorenal diseases. These diseases have varied little, if any, and some of them have increased, and this in the face of scientific medicine. Within this group are the greatest of killing diseases. Their control, management and eradication are certainly not within the province of any form of State medicine! To affirm that they are is to show a fundamental misunderstanding of the problems involved. This misconception lies in the belief that because we have invented skillful diagnostic apparatus, improved and perfected their therapeutic application, erected imposing hospitals, delved into the function and physiology of hidden and obscure glands, and perfected surgery to a high art—all this need only be applied wholesale and indiscriminately to

\*Read before the annual meeting of the Minnesota State Medical Association, St. Paul, Minnesota, May 4, 1937.

the public at large, to attain perfection in health for everyone. It is the typical American point of view of interpreting life in terms of size and numbers, rather than in terms of quality and intellect.

The understanding of some of these problems lies in the study of heredity and hereditary influences. Their solution will never come from legislators or politicians, but rather by a knowledge of genetics; by proper mating; by adherence to well-known biological laws; by preventing the unfit from propagating; by relieving economic anxiety; by making leisure, calmness and complacency a habit, rather than excitement and confusion. Peace of mind cannot result if the specter of poverty is ever present. Much of the unhappiness in the world today is due to unrest; to the dissatisfaction of our status in life; to the desire for that which our neighbors have, the acquisition of which only gives us a fresh starting place for something more. It is the siren song of modern life, hurry, hurry, hurry! Just so long as modern living, with its killing competition, with its envy and greed, with its excitement and restlessness, exists, just so long will we have manifestations of nervous and cardiovascular diseases. No amount of health legislation will ever make any difference. The causes here are economic. Heredity and environment influence to large extent our health and longevity.

#### Prevalence of Superstition and Ignorance

There is still in the minds of the public at large much superstition, also, regarding sickness and its cure. In early days (and not so far back either, for witches were hanged in New England) sickness and pain were regarded as a visitation from an angry God, or possession by an evil spirit. These afflicted people rushed terror-stricken to the priest, the chief, and the medicine man for prayers, sacrifices, incantations, and fetishes, fully believing that if the proper rite were performed, relief would speedily come.

The parallel of this is seen in our abhorrence of the number 13, the carrying of lucky charms, and the bringing of pebbles from Callander. It has its counterpart in the firm belief that if one only finds the right doctor, he will get the right medicine to effect a cure. It is identical in spirit with those who seek out for treatment the cults who practice the laying-on of hands, and the ap-

plication and display of mysterious electrical appliances and other doo-dads. That which is indiscernible and oracular is impressive and implies occult powers. It is, therefore, apparent that we do not have to go back to the dark ages, or to the beginning of medicine, to find ignorance and superstition.

It is human nature to be complacent about health until there is pain or disability. The sick-bed usually is occupied before help is sought. Even then, there is a widespread confidence in self-treatment, faith cures, divine healing and patent medicines. Irresponsibility, ignorance, superstition, stupidity, lack of foresight and thrift are fundamental human defects, which no amount of legislation will ever correct with any greater degree of success than prohibition stopped drinking.

If these things are true, there is a dire and crying need for better understanding of fundamental conditions. There is a tremendous need for public education. Let fear, ignorance, and superstition be banished so that logical and intelligent methods can be applied to the sick and to the improvement of the race.

By implication and assertion, the medical profession has been placed in a false and defensive position. It has been made to appear that our services are denied to a large number and that much of our skill and therapeutic agencies are rusting from disuse. We are accused of being a guild, a union, smugly withholding our services except to those who can pay. By habit, custom and tradition, our profession has carried on its work without ostentation. Hippocrates bound his students to remain silent by virtue of the intimate character of their work. Because of this established attitude, which I deem essentially right, we have until recently left unchallenged this storm of criticism, implication and innuendo.

The public is told that thousands suffer and die from lack of medical care. I need not tell you, my friends, that the state of health in this country is on a higher plane than at any other time in its history. I need not point out that sickness and death are immeasurably less here than in other countries of comparable size. I need not affirm that our efforts in preventive medicine have resulted in the control and almost the eradication of certain diseases, so that statisticians tell us they will eventually be found only on the pages of history. I need not inform you



that the medical profession has performed its duty to the needy, completely, without reservation or complaint, during the unprecedented years of the depression.

I need not authenticate that many people—a large number—never do need any medical attention. Of course, many have chronic defects. Many of you in this audience have chronic ailments of a minor degree which in no way materially affects your general health. The correction of these is entirely a matter of your own volition. If doctors' offices dotted the landscape like the ubiquitous billboards and gasoline stations and the services were all free, the public still would not seek attention for chronic defects.

The fact is that medical service can be had by any who have interest, volition, and intelligence enough to seek it. I need not establish that coercion by law is contrary to human nature. Irregular practitioners will find favor with multitudes in preference to doctors as long as ignorance and superstition dwell in the human mind, leaving in their wake, tragedy, suffering, incurable diseases, disappointments, and frustrated hopes, while the coffers of those who lawfully exploit human suffering and credulity, bulge with their ill-gotten gains. What a paradox it is that doctors of medicine must by law conform to exacting and meticulous standards, while the others, without knowledge, without cultural or scientific training, may practice the healing art, with their unscientific and even more ridiculous methods! The laws of our glorious republic safeguard this wonderful body of ours from the ministrations of the doctor, but hand it over with confidence, childlike simplicity and innocence, to the depredations of any one who calls himself a healer. By any stretch of the imagination is there any reason or logic in such solicitude on the one hand, and such utter indifference and unrestraint on the other? It will be a blessed day for the public when all who practice the healing art, no matter by what method, are compelled to submit to the same training, and conform to the same standards. It should make no difference whether drugs are used, diets offered, or surgery practiced. Ignorance, delay and improper practices have transformed many curable cases into hopeless invalidism. Legalized murder certainly exists elsewhere than within prison walls and on the fields of glory. I emphasize all this because health insurance takes

no cognizance of these evils and their pernicious effects.

The public, because of general unintelligence and susceptibility to advertising, believes implicitly in a specific cure for all ailments. The patient regards his "indigestion" as a distinct entity, separate from relationship to the rest of his body. The doctor knows that the body and its ills must be considered as a whole, and not that alone, but must be envisioned for complete understanding in relationship to its environment and heredity. Ambitions, hopes, disappointments, envy, greed, jealousy, suppression—all these color the canvas, portraying the picture of personality. They are currents which may lead this frail craft, not only to peaceful, placid waters of complacency and stability of mind and body, but also may dash it on the jagged rocks of mental and physical disaster. Is there any likelihood that these evils will be corrected by any pattern of medical reform? Do we not need more education and less legislation?

#### **Influence on Medicine of Changing Political and Economic Concepts**

In order to understand the agitation to make over the medical profession, one has only to take cognizance of the radical trends of thought throughout the entire world. Has the world been made "safe for democracy"? Is it indeed not quite the opposite? We have seen democracy demolished and in its place have come Fascism, Communism, and Nazism. Political and governmental conduct has been radically changed. There has been a tendency, the world over, towards ascendancy of the State, with the result that the effort of the individual has been less effectual and less fruitful.

It has been affirmed, by those more eloquent than the speaker, that this country was formed and developed by our forbears who fled Europe to escape the omnipotence of the King and the evils of an autocratic group, that they might enjoy freedom of thought, speech and action. All history proves that the greatest of civilizations and cultures were those developed where the individual was paramount. Greece reached its greatest heights in the time of Pericles, Plato, Socrates, and Aristotle. The Renaissance in Italy and England was the result of an exuberance of individual expression. France began its greatest glory when the Bastille was stormed and

the heads of the civil and dominating group fell into the bloody baskets. Freedom of religious thought and belief was only attained when the people rose up and purged the nations. The thorny path led Copernicus to banishment, Servetus and Savonarola to the burning stake, and many other individuals to the dagger and the rack because they raised their voices in protest against the dominance of an unfair and unjust group.

You say these are unfair parallels. You say such things cannot happen here. They have happened in this twentieth century in Europe. Great scientists have been banished and made fugitives. Illustrious physicians have been denied the right to practice. Scientific knowledge of great value has been refused publication, while other scientific books have been destroyed. Liberty, freedom of speech, thought, and action have undergone decay in many Continental countries. The state is all-supreme! Conscience is dulled and suppressed!

Our own country has not escaped the influence of these currents of thought. We see increasing governmental interest in civil and industrial activities. These new concepts have created a doubt in the worth of our traditional sanctions and have shaken the confidence in our established institutions. Is not the attack and the diligent program of discrediting the medical profession only an example of the powerful economic forces exhibited in all human activities? Has not the unrest and the uncertainty of economic forces filtered and permeated all phases of human endeavor? One heard little of socialized medicine until the depression devastated the business and morale of our citizens. Now it would appear as though most of the ills of humanity could be laid at the door of the medical fraternity. There were no grounds for complaint until this economic confusion occurred. It is inevitable, in times of crisis and despair, for self-appointed evangelists, imbued with a sudden burning and consuming humanitarian thirst, to rise up and lead the discouraged, who, with outstretched arms, stumbling feet and eager faces, follow with childlike trust as did the children after the Pied Piper, only to find disillusionment and frustrated hopes. The magic prescriptions of these modern soothsayers and social astrologers seem strangely reminiscent of the

"shot-gun" mixtures of our own twilight medicine!

Tragedy and economic crises result in a dislocation of logic and of our established concepts. We lose sight of fundamentals and grasp at plans and panaceas, especially if they are prophetic and sanctimonious. Human nature has ever been thus. The facts of life are often stark and cruel. It is human nature to seek comfort, solace and relief from actualities. Therein lies the lure of drugs and alcohol with their comforting and exalting effects. In like manner we eagerly seek "the promised land" of social and economic problems, soothed into intellectual anesthesia and expansive well-being by the breathtaking beauty of the vision. The best social insurance that I know of is work—work that pays a good wage, work that stimulates incentive, encouraging thrift and frugality, work that rewards the worker in proportion to his honest effort, work that provides independence and liberty and opportunity to purchase medical service, when it is needed and from whom it is desired. I challenge the statement that we need to change some of our institutions! Honesty, thrift, integrity and sanity of outlook are still fundamental. Patronage and dependence are likely to undermine the character and breed laziness, insolence and revolution. Economic crises, ravages of flood, famine and drought, have existed since the beginning of time. They are inexorable and inevitable. The silent machinery, the smokeless chimneys, the red entries in the ledger, poverty and tragedy, are stark symbols of man's impotence against natural and economic forces. Can it be denied, then, that this attack on medicine is a symptom of the times? Is it not analogous to the treatment of a cough when the patient has pneumonia? Do we not have the cart before the horse? In our bewilderment we often seek the easiest explanation of truth. "One may dive too deep or soar too high and the truth escapes." The medical profession has no cure for the ills of the body that are dependent upon the ills of society. Should we not hold steadfast to those established institutions which have stood the test, regardless of failing confidence and economic confusion? Should we not cling unwaveringly to individualism in medicine until the wheel turns again, when sanity, work and thrift will be fundamental?

## The Art of Medicine

The practice of medicine is largely an art. Music, poetry, painting, and sculpture were highly developed, and, indeed, had attained perfection when medicine was still in its crude beginning. Nike of Samothrace (Winged Victory), Venus de Milo, and the Laocoön, sculpture that has never been excelled, were produced a century or two B. C. Homer had written his *Odyssey* at a time when diseases were treated by superstitious rites, or by the giving of horrid concoctions. Chaucer had written *Canterbury Tales* two centuries before the ligature was applied to an artery to control hemorrhage. Rembrandt had painted his great picture *The Anatomy Lesson* two hundred years before Pasteur linked bacteria with disease, and Michaelangelo was spreading his canvases with infinite beauty long before this.

But I call your attention to the fact that, although the science of medicine was little if at all understood in those early days, the art of the physician was bringing sympathy, cheer, and restoration to health. Those glorious words of Hippocrates, transcending most human attributes, illustrate the constant guiding principle. I love to contemplate them, "I will follow that method of treatment, which according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. With purity and with holiness I will pass my life and practice my art. Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary art of mischief and corruption. While I continue to keep this oath unviolated, may it be granted to me to enjoy life and practice of the art, respected by all men at all times, but, should I trespass and violate this oath, may the reverse be my lot."

No more inspired lines were ever written! No more blessed rules of conduct were ever promulgated. And, so down through the centuries, these principles have been paramount in the practice of medicine. It recognizes that often the greatest good that we bring to our patients lies outside the giving of drugs.

Formerly, the doctor was the family counselor in many problems aside from that of illness. No one, not even the spiritual adviser, knew the troubles that beset the family circle better than

he. No one came closer to the inner life of the family. It was he who inspired that confidence and trust which stimulated the will to believe and to get well. It was he whose counsel was sought when trouble, trial and tribulation laid their heavy hands upon the family life. It was he who was first thought of because of his intimate knowledge of all that concerned the family, from sickness to domestic or economic difficulties. In him was placed that reliance, trust and confidence that brought in most instances peace, tranquility, and adjustment to those within the family circle. The Man of Galilee himself was called the great physician, not only for his ability to heal the sick, but also for his ascendent powers to sympathize, to encourage, to strengthen and to make the rough places plain.

The practice of medicine, however, is not the simple thing that it was in those days. There has been a tendency to regard specific diseases as separate entities. This probably has resulted in over-specialization. For complete understanding one must think of the entire organism as a personality. We as a profession are likely to fall into the same trap as those economists who would make medicine a business-like science. Their theory is predicated upon the assumption that sickness and disease can be classified in the same manner as botany specimens, and all that is necessary is to apply the cure. This is far from the truth in many instances. It is the personality, the ego, that is frequently out of adjustment with its environment. Stress and strain of economic existence and the pull of hereditary factors are at the bottom of many illnesses. This has been especially true since the depression came. Our profession has given too little thought to these ills, with the result that psychologists and psychoanalysts have supplied the need to these suffering individuals. These personalities need sympathy and friendly counsel, as does the parched field need the gentle rain. Let us give more thought and attention to the sick personality! Let there be a return to the family doctor and less specialization!

Those who talk so glibly of making over this profession of ours—this profession rich in traditions; this profession which has attained such noble worth; this profession surfeited by kindness and sympathy; this profession whose only passwords are mercy and pity—lose sight of the art of medicine. They would reduce all these

human attributes of kindness, pity and mercy, to a formula. They would put the matter on a business basis, under the assumption that only scientific medicine need be applied to the sick in order to effect a cure. What an abysmal misunderstanding of the principles involved! What gross injustice and what cruel denial would result, to many, many personalities! The art of medicine and its application must remain unchanged. Nothing must make unheard those words so often expressed by the sick, "Doctor, I'm so glad you have come." There is wrapped up in that one sentence the epitome of the medical art which has existed through the centuries. It is akin to the child who reaches out his hands to his mother and finds solace and understanding in her arms.

The art of medicine has not changed. The passwords of mercy and pity are the same today as in the days of Hippocrates and the doctor of the old school. These qualities of the human soul must not die if the art is to exist. Would you have me believe that they can be taken over by the politicians and bureaucrats? Would you have me think that they can be reduced to a business formula? Would you have me think that they can be turned on and off by a switch? I call you to witness, that this can no more be done without debasing the quality, than one can stifle the love in the human breast for its Creator, without dwarfing the soul.

### Medicine an Altruistic Art

It was Alexander Pope who said, "Be not the first to try the new, nor yet the last to lay the old aside." There should be no need of saying that the medical profession, above all others, would be the first to adopt any change which would result beneficially to the public health. If this is not true, then indeed, have our traditions, our altruism, our purpose, our ethics, been a living fraud. Is it not our duty by virtue of our training and knowledge of medical problems, to protect the public from the adoption of suddenly conceived, overnight schemes which would result in the deterioration and prostitution of the medical art? Can our motives be impugned, can we justly be called selfish when we strive to maintain the finest quality of medical service in the world? Can we be reproached, can we be convicted of deceit when we oppose the control of medicine by politicians with all the inevitable

and shameful patronage and waste, in which political machinations result?

We have been called ungenerous, mercenary, illiberal, and selfish. If to teach principles of sanitation and hygiene, if to broadcast rules and programs of maintaining health, if to give freely the discoveries of science resulting in the eradication of suffering and disease, if refusal to patent new remedies or to keep them hidden and secret, if to maintain clinics and hospital wards without recompense, if to apply knowledge of preventive medicine to the wiping out of specific diseases, if constantly to diminish our private practice and business by the dissemination of all this knowledge—if all this be ungenerous, then thank God, I belong to such a selfish group!

We believe as a profession that whatever is just and right for the individual is just and right for the group. It is our habit and custom to render services to the individual at reduced fees, when circumstances deem it to be fair and right. If this principle is equitable, then it should be applied under similar needs and conditions, to the group. To this end, and with the approval of our parent organizations, certain plans of voluntary hospital insurance are being tried. This seems to me to be just and proper for out of it may evolve a workable, suitable plan, free from political or other extraneous influences, which will meet the major expense of hospital confining sickness for those least able to afford it. One lacks the wisdom of a sage or the temerity of the foolish to outline a definite plan of that which is still experimental.

We certainly affirm our desire of instituting any changes made necessary in view of different economic conditions. We want those innovations, however, to come gradually, to be built up solidly by trial and error. Science grows thus. An observation, a fact, a theorem, finally a proof. So with us. Let changes come by attrition. Let there be no radical stampede resulting in disappointment, retrogression and frustrated hopes. This is my answer to those of our profession who clamor and cry for a definite, militant program of our own. It would take divine wisdom to foresee the future, but it only requires common sense to keep constantly before ourselves, before the public, and before our legislators, the necessity of maintaining unsullied whatever is noble and worthy to the medical art! The only guide we have for the future is expe-



Experience is largely the record of our mistakes. Lord Byron said, "The best prophet of the future is the past." There is ample evidence in events of the past of the deterioration of medicine under political influence. There has been no particular dissatisfaction of the public with the present type of medical service.

### Social Insurance Not the Answer

I have considerable faith in the intelligence and motives of our legislators. I cannot believe that they, with a complete knowledge of experience in other countries with social and health insurance, would countenance any such system. I ask them and the American people whether it has strengthened and fortified governments; has it lessened poverty; has it added to individual happiness and security; has it lessened sickness and morbidity; has it lengthened life; has it done any of these things in those European countries where it is practiced? Let us not substitute rhetoric and emotion for logic. The answer is NO. There is a greater public consciousness than ever, that we are indeed "our brother's keeper." But let us see to it that he has an opportunity of keeping himself. He should have the opportunity and the right to remain independent and not become a "poor relation." If socialism is just and needed, then let us socialize everything. But, if we still believe in the principles of democracy, guaranteeing liberty in thought, speech and action, on which this country was founded, let us adhere to them with perseverance, moderation and firmness. We want none of those European systems. We do not want American medicine inoculated with the festering sores of political control; with malingering patients seeking cash benefits; with clerk-like prescription writing doctors, exhibiting lack of personal interest. These are veritable cancers, insidiously impairing the worth and prostituting the art of medicine. We do not want a legislation which benefits one class at the expense of another. Health insurance does not profit the clerk, the farmer, the self-employed, the domes-

tic, or the indigent. Health insurance takes no notice of the manufacturer, the executive, those whose efforts and ability give work to thousands in this country. Verily, these are blessed and forgotten souls. It would indeed be revolutionary if some one thought of protecting them when adversity struck. We do not want a tax on the already pitifully thin pay envelope of the worker; on burdened industry; and on the heavily taxed citizens of the state—a tax that is uneven in its assessment and uneven and unfair in its benefits.

We are indeed a profession set apart. We must not lose the conviction that we are dedicated to the care of the sick. Down through the ages this has been our duty. Unless we cherish a cordial habitual and immovable attachment to this heritage, something of value will be irrevocably lost. The members of the Medical Association of the State of Minnesota, with their culture and knowledge, represent an invincible force for good. I beg of you, for the public good, that you remain unified in motive and purpose, filled with enthusiasm and imbued with the justness of your cause.

### A Charge to Keep

Ah, my confrères, we have a duty to the public and to ourselves. We have a charge to keep! A charge from those whose heritage we prize: those who now sleep the long sleep; those whose minds and hearts must have been akin to the Divine because of their noble motives and purposes; those whose work has shaped and directed currents of civilization and made the lot of mankind better than any statesman, warrior, or general; those who gave us the tradition of beneficent service to all who suffer; those whose love of humanity surpassed even that of the love of woman; those whose paths led to a martyr's grave that science might advance. Their spirit is not dead! Their precepts and principles, examples and teachings, will live not only on the pages of history, but in the hearts and minds of all worthy to be called physicians.



## SURGICAL DISEASES OF THE PANCREAS\*

With Special Reference to Cysts, Acute Pancreatic Necrosis, and Hyperinsulinism

OWEN H. WANGENSTEEN, M.D.

Minneapolis, Minnesota

**A**FFECTIONS of the pancreas only infrequently demand the attention of the surgeon. Of patients who suffer from diabetes because of sclerosis or atrophy of the pancreatic islands of Langerhans, however, Joslin has estimated that about half will ultimately come under the care of the surgeon because of infection or circulatory disturbances. It is the purpose of this paper to deal with the less frequent diseases of the pancreas which necessitate a direct attack upon the pancreas itself.

### Congenital Anomalies

Accessory pancreatic tissue has been found in the walls of the intestinal canal from the stomach to the colon. Its most frequent aberrant position is in the wall of the duodenum. Accessory pancreas in a Meckel's diverticulum has been known to give rise to intussusception. Accessory pancreas in the mesentery of the bowel rarely gives rise to difficulties. Such accessory pancreases are usually single, but multiple accessory pancreatic bodies are occasionally found.

The annular pancreas is particularly prone to give rise to trouble. Undoubtedly a number of instances of congenital duodenal stenosis and atresia have their origin in this anomalous development of the pancreas. If the obstruction to the duodenum is incomplete, the symptoms of pyloric obstruction may only become apparent later in life. The condition may then be rectified by excision of the pancreatic tissue which overlies the anterior duodenal wall or a gastroduodenostomy or gastro-enterostomy may be made to circumvent the obstruction.

### Injury

Owing to its deep location in the abdomen, the pancreas is not readily injured. Because of its position over the spine, a severe blow in the epigastrium may divide the pancreas. The writer has once observed this occurrence attending the kick of a horse. Bullet wounds of the upper

abdomen may traverse the pancreas and this is in some measure directly responsible for the high mortality attending isolated perforation of the stomach. It is to be recalled that this sequence of events took place in the instance of President McKinley. An assassin's bullet perforated both walls of the stomach and lodged in the pancreas. The holes in the stomach were sutured, but the concomitant injury to the pancreas was largely responsible for the fatal outcome. It is interesting to know that the bullet was not found in the adipose tissues of the retroperitoneal space despite a careful search extending over seven hours by a competent pathologist. The aid of the roentgen-ray was then (1901) undoubtedly available in Buffalo, but its wider adaptation in clinical medicine was a later day development.

The surgeon now and then injures the pancreas during gastric resection when an ulcer on the lesser curvature has eroded the posterior gastric wall and the stomach has become intimately adherent to the pancreas. However, under such circumstances the surgeon can choose, if he prefers, to leave a little of the gastric wall on the pancreas, destroying the gastric glands by fulguration. When a gastric cancer invades the pancreas, however, the surgeon must excise this extension if he elects to resect the stomach. The writer has had some gratifying results with the acceptance of such pancreatic injury as a part of the operative procedure in some cancers of the stomach. The experience with pancreatic resection for hyperinsulinism has taught that injury of the pancreas is fairly well tolerated if hemostasis is secure and the resected portion of the gland is embedded in omentum. This demonstrated tolerance of the pancreas to withstand traumatic insults, however, should afford no occasion to take unwarranted or unnecessary liberties with it. In performing splenectomy, the surgeon should still take great pains to avoid including the tail of the pancreas in his ligature.

\*From the Department of Surgery, University of Minnesota. Presented before the annual meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 4, 1937.

### Acute Pancreatic Necrosis

How the disease entity of acute pancreatitis or pancreatic necrosis comes about is not wholly clear. Since the finding of a small gallstone at the termination of the common bile duct by Opie in 1901, it has become known that the choledochus and duct of Wirsung may be converted into a common channel through such an agency, bile being retrojected into the pancreatic ducts. Experimentation has established the validity of the contention that pancreatic necrosis may have this origin. The number of instances, however, in which a mechanical obstruction which can cause this is found, are few. Such retrojection of bile in the presence of a common channel would therefore most likely have its origin through functional disturbances in the neuromuscular mechanism of the ampullary portion of the common bile duct. Boyden has recently demonstrated quite conclusively that the sphincter of the choledochus is not at the papilla or tip of the ampulla, but lies usually about 2 centimeters proximal to the ampulla. The chief problem of the causation of acute pancreatic necrosis centers in the conversion of inactive trypsinogen into active trypsin in the pancreas itself. Normally this activation takes place in the duodenum by the physiological activator succus entericus. There are many agents which can effect this conversion *in vitro*. In the experimental animal, however, many such agents are insufficient to produce the disease when operating as single factors. The explanation of a number of instances of acute pancreatic necrosis may lie in a combination of factors which are ineffectual when operating singly. Some experiments done by Leven, Manson, and the writer, upon the cat, would indicate that pancreatic necrosis is more likely to follow retrojection of bile into the duct of Wirsung from the choledochus when fat was ingested. Dragstedt and his associates are inclined to believe that the bile regurgitation factor will account for only a small percentage of instances of acute pancreatitis. They feel that a primary infection in the pancreas plays the more important rôle. Rich and Duff in some recent experiments stress obstruction of the pancreatic ducts as the chief etiologic agent. They believe that obstruction of the ducts permits extravasation of the glandular enzymes into the substance of the pancreas, thus producing necrosis. They state that activated trypsin pro-

duces the specific effect of thrombosis and hemorrhage no matter which tissue is concerned. Rich and Duff relate that they have observed metaplasia of the duct epithelium in the pancreas of patients dying of acute pancreatic necrosis.

### Treatment of Acute Pancreatic Necrosis

It has been the writer's practice for some years to treat acute pancreatic necrosis conservatively without operative intervention. It would appear that drainage of the peritoneal cavity, drainage of the biliary tract and tamponade of the pancreas accomplish nothing specific in the control of the disease. The patient must sustain the trauma of operative intervention, which is considerable, in addition to the burden of the disease. The fluid which accumulates in the peritoneal cavity in the course of pancreatic necrosis is innocuous; drainage of the biliary tract is only of value in the presence of continued obstruction at the ampulla, and it is difficult to believe that tamponade of the pancreas will inhibit autodigestion of the pancreas—the process which threatens life. The therapy of pancreatic necrosis, it would seem, should be directed to stopping the activation of trypsin within the pancreas. The symptomatic relief of pain and intestinal distension can usually be accomplished by the application of suction to an indwelling duodenal tube and the employment of hot packs to the abdomen. Starvation is probably fully as effectual as any other known agent in interrupting the pathologic conversion of trypsinogen into trypsin within the pancreas. Lewis warns against the administration of glucose on the basis of Babkin's work, who found that hyperglycemia increased the production of pancreatic enzymes. It is difficult to believe that operation which only establishes the diagnosis but accomplishes no specific good is of any value in treatment. It has been the writer's practice to do the delayed operation after convalescence from the acute disorder. At operation, done usually about three weeks after the onset, areas of fat necrosis are almost invariably still demonstrable. Inasmuch as disease of the biliary tract is the most common concomitant of pancreatic necrosis, excision of the gallbladder and careful examination or exploration, if indicated, of the common duct are in order. Latterly the writer has not advised delayed operation after recovery

from the acute attack of pancreatic necrosis if cholecystography demonstrates a normal gallbladder.

### Recognition of Acute Pancreatic Necrosis

As far as the acute interstitial variety of pancreatitis is concerned (Zoepffel's pancreatic edema) there is no reason to believe that this pancreatic disturbance eventuates in acute pancreatic necrosis. Acute interstitial pancreatitis not infrequently attends acute biliary tract disorders. Those who have operated on the so-called "acute gallbladder" have seen this pancreatic edema with fat necrosis not uncommonly. This form of pancreatic disturbance apparently does not threaten life seriously, all of Zoepffel's and Arnsberger's cases having recovered. The great hazard of acute pancreatic necrosis is well known. With the widely practiced conservative management of acute biliary tract disorders, of which the acute interstitial type of pancreatitis is a not infrequent accompaniment, did pancreatic edema eventuate often in acute pancreatic necrosis, one would anticipate finding in every large series of "acute gallbladder" cases treated conservatively, a definite mortality from acute pancreatic necrosis. Such, however, is not the case. One may reasonably conclude therefore that these are really two different types of pancreatic affection and that acute interstitial pancreatitis may be treated conservatively with safety. The findings upon which the diagnosis of acute pancreatic necrosis can be made have been described elsewhere.<sup>25</sup> In brief, it may be said that in the typical case of pancreatic necrosis there is very severe pain. The abdomen is tender everywhere but largely in the upper half, where also the greatest rigidity is to be found—usually about a grade 2 or 3 on the basis of 4. Occasionally the outline of the indurated pancreas may be made out with the hand, indicating that the board-like rigidity of ulcer perforation is not observed in pancreatic necrosis. Unlike acute infections of the biliary tract which present the greatest tenderness and rigidity in the upper right abdomen, instances of acute pancreatic necrosis, in the experience of the writer, exhibit no such unilateral intensification of findings—the rigidity being uniform in the upper abdomen. Rectal and vaginal examination reveal no tenderness. There is no *intestinal colic*. The pulse and temperature usually exhibit moderate eleva-

tion. In the experience of the writer a depressed arterial blood pressure with shock has been observed only ante-mortem and in instances of pancreatic apoplexy.

The diagnosis therefore is made largely on the basis of exclusion. Acute cholecystitis, ulcer perforation, intestinal obstruction, acute appendicitis and strangulation of an ovarian cyst are the common conditions which have to be differentiated. The history and the differential criteria of physical examination which have been described, with the aid of an erect and a scout film made with the patient lying supine, usually serve to establish the diagnosis. The pain in acute pancreatic necrosis is severe but the rigidity of the abdominal wall does not approximate that of ulcer perforation. In acute appendicitis and strangulation of an ovarian cyst, the physical findings are most marked in the lower abdomen, whereas in acute pancreatic necrosis most tenderness and rigidity are to be found in the upper abdomen. Elman finds the blood amylase findings of value. The experience of this clinic in the diagnosis of acute pancreatic necrosis indicates that the differential criteria above described are quite reliable.

The condition described as chronic pancreatitis is not well understood. When jaundice interpreted to be due to carcinoma clears after surgical interference, and the patient continues in good health, the surgeon infers (on no good evidence) that his patient was suffering from chronic pancreatitis.

### Abscess

The most frequent precursor of pancreatic abscess is necrosis of the pancreas. Occasionally such abscesses are of hematogenous origin. They have been known to occur during mumps. The head is the portion of the pancreas most frequently involved in abscess. The writer has watched a pancreatic abscess go on to complete healing under conservative management. He has also observed spontaneous hemorrhages from such an abscess after the institution of external drainage—an event which may bring about sudden death by so-called "pancreatic apoplexy." A pancreatic abscess may follow an attack of pancreatic necrosis during the course of which a portion of the pancreas sloughs. Similarly a pancreatic abscess may be the precursor of a pancreatic cyst.

The writer is disposed to feel that most cases of pancreatic abscess are best treated conservatively. If fever and tenderness do not abate after a reasonable trial with non-operative treatment, external drainage should be done,

marsupialization. Six patients with serous pancreatic cysts have been treated in that manner in this clinic and, as far as the writer has been able to learn, there have been no persistent fistulas. Cystadenomas of the pancreas should



Fig. 1. The typical abdominal protuberance presented by a patient with a large pancreatic cyst. The tenting in the left upper quadrant is quite apparent.

care being taken to avoid contamination of the peritoneal cavity. In instances where the febrile response of the patient gradually subsides with parallel clearing of the abdominal findings, a waiting policy should be followed.

### Cysts

Pancreatic cysts are essentially of two varieties: (1) the simple serous cysts and (2) cystadenomas, which in reality are tumors. The differentiation frequently made between true and pseudopancreatic cysts does not appear to be well founded. The most frequent antecedent of a large serous cyst of the pancreas appears to be a prior attack of pancreatic necrosis. These cysts usually present in the upper left abdomen and occasionally tent up the abdominal wall (Fig. 1). A pancreatic cyst is to be differentiated from a kidney tumor or swelling in that the latter can be felt almost invariably both in the loin and on the anterior abdominal wall. The barium-filled stomach can be readily shown to lie in front of the swelling. The pancreas being retroperitoneal, a cyst arising in it usually distorts the course of the ureter (and most frequently the left). In the experience of the writer, such a cyst can be satisfactorily managed by



Fig. 2. The cyst shown in Figure 1 after excision. It proved to be cystadenomatous in type with considerable solid tumor present. It was surrounded by a very rich network of veins (Mrs. M. C., Hospital No. 63236).

always be excised. Marsupialization fails to cure them and further they may be the progenitors of cancer of the pancreas.

Excision of a large cystadenomatous tumor of the pancreas is not a simple task. Two such tumors have been seen in this clinic, both being successfully extirpated (Fig. 2). One of these had previously been marsupialized, with, as one might suspect, the persistence of an odorous fistula.

### Carcinoma

About 2 per cent of all carcinomas have their origin in the pancreas. The most frequent site is the head of the organ, where invasion or compression of the choledochus early gives rise to jaundice. There have been no cures attending radical excisions for such a lesion. Leven has reviewed the experience of this clinic with the palliation afforded by cholecysto-anastomoses.<sup>16</sup> The average survival period after such an operation in the University Hospital series (8 cases) was four months; the longest was fourteen and a half months. A 25 per cent mortality attended



the operation. The chief cause of death is hemorrhage.

Whipple, Parsons and Mullins have recently described instances in which they successfully removed in two stages a segment of the duodenum and the attached pancreas for carcinoma of the ampulla of Vater. The major pancreatic duct is ligated, a cholecystogastrostomy made, the ends of the pylorus and the duodenum are inverted and a gastro-enterostomy is done. Were it not for the danger of cholangitis and hepatitis following sacrifice of the sphincter choledochus, this operative procedure would appear to be an excellent one which might even be extended to some instances of carcinoma of the head of the pancreas.

#### Pancreatic Fistula

A complete persistent external pancreatic fistula in the dog is invariably fatal, due essentially to the loss of fixed base (sodium). Bollman has observed however when the dog is permitted to lick the secretions from the wound, that such a fistula may be tolerated. Such a fistula occurs in man after trauma or following operative attack upon the pancreas in which the major duct is divided. Severe excoriation of the skin results unless the skin is protected. If the drainage is profuse, suction should be instituted. A 5 per cent tannic acid ointment serves to protect the integument when the drainage is not excessive. Such a fistulous tract may be implanted into the stomach (Jedlicka). On one occasion, the writer successfully closed such a fistula by implanting a pedicled muscle flap into the fistulous tract.

#### Pancreatic Lithiasis

A calculus in one of the pancreatic ducts is one of the rarest of pancreatic maladies. No instance has come under the writer's observation. Obstruction of the duct is believed to be the major factor in their production. They are often radio-opaque. They may be identified fairly accurately prior to operation, if the shadows of such a stone can be identified on a radiogram within the limits of the horseshoe demarcated by an indwelling duodenal tube which has made its way as far as the duodeno-jejunal angle (Engelstad and Römcke). They often give rise to severe pain and should then be excised. Suppurative pancreatitis may also result owing to the obstruction of the pancreatic ducts.

#### Hyperinsulinism

Within the past decade, a new pathologic entity of great significance has come to light in the pancreas. It relates to the over-production of insulin by small adenomas of the pancreas which have come to be known as insulogenic tumors. Pathologists had observed them for decades, and had believed them to be without particular interest, other than as potential forerunners of carcinoma of the pancreas. Evidence seems clear too that abnormal production of insulin may occur in a pancreas which grossly or microscopically does not appear to be abnormal; that is, hyperinsulinism may occur in the absence of a demonstrable insulogenic tumor. That such is the case can be reasonably inferred from instances in which subtotal resections of what appears to be normal pancreas, have brought about complete relief from the convulsive seizures caused by hyperinsulinism.

*Symptoms.*—Spells of tremulousness and weakness and periods of unconsciousness attended by convulsive seizures are the usual complaints; there is often a sensation of great hunger accompanied by sweating immediately preceding such attacks. Not uncommonly patients learn that the taking of food, especially the ingestion of candy or sweetened orange juice, serves to lessen the frequency of periods of unconsciousness and convulsive seizures. The symptoms of the disease are identical with the occurrences which attend the taking of insulin by a diabetic patient beyond the physiologic requirement.

The physical examination between attacks reveals no pertinent findings. Sugar is not found in the urine and the fasting blood sugar is invariably low. Convulsive seizures or a period of unconsciousness due to the hypoglycemia of hyperinsulinism may be interrupted by the intravenous injections of glucose or by the intramuscular injection of a few minims of 1-1000 solution of adrenalin, as a result of which the blood-sugar value is increased. The demonstration of subnormal blood-sugar values during a convulsive seizure and the interruption of the attack by the intravenous injection of glucose establish the diagnosis of hypoglycemia.

One of the difficulties which hedges about the problem of hyperinsulinism is that the demonstration of hypoglycemia is not synonymous with hyperinsulinism. Affections of the liver, adrenal and pituitary, also have been known to produce



hypoglycemia. The most frequent cause, however, of spontaneously occurring hypoglycemia is hyperinsulinism. Exploration of the pancreas would appear to be justified in all instances of hypoglycemia where the cause remains obscure. When a tumor can be felt in the substance of the pancreas at operation, the course for the surgeon is clear. He should remove the tumor, resecting a bit of the adjacent pancreas if so indicated. When, however, a tumor can not be felt, his course of action cannot be so readily agreed upon. Whereas the results of excision of an insulogenic tumor have been almost invariably attended by cessation of convulsive seizures, such good fortune has not often accompanied resection of the pancreas when no tumor was found. The pertinent question in this latter type of case is, whether adequate excision of pancreatic tissue would suffice. There are two reported instances in the literature (Graham and Hartmann, and Simon) of hypoglycemia in which subtotal pancreatic excision resulted in cure. In the 1936 Year-book of Surgery, Graham states that three such cases are now known. The writer did such a subtotal pancreatic resection in an infant who died six weeks after the operation—a small residual abscess being found at postmortem at the hilum of the spleen. The hyperinsulinism appeared to have been successfully dealt with. After subtotal pancreatectomy, blood-sugar values were with few exceptions normal and there were no more convulsive seizures (Case 5).

However, there are a large number of reported experiences which attest the futility of pancreatic resection when an insulogenic tumor was not encountered (McCaughan and Broun). Before concluding that such instances of hypoglycemia had their origin in a site other than the pancreas, one would do well to ask whether the pancreatic resection in the failures was adequate. It is significant that in the successful cases *subtotal* resections were done.

The writer has had an operative experience with five cases. In three, insulogenic tumors were felt and removed at operation. These three patients have made complete recoveries from hypoglycemia with associated convulsive seizures. One of these, however, who had deteriorated physically and emotionally to an imbecilic state before operation, owing to the devastating effects of prolonged hypoglycemia upon the

brain, has not made a complete recovery (Case 2). The fasting blood-sugar values have been normal and there have been no convulsions. She was bedridden and had almost complete motor aphasia before operation; now she can do some

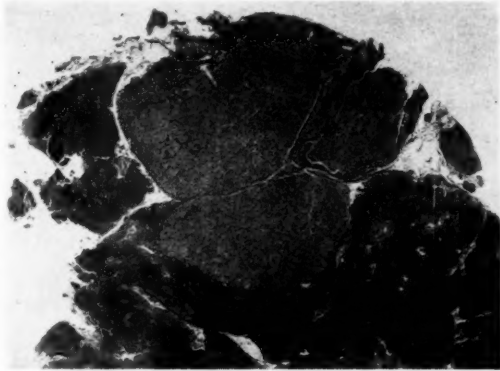


Fig. 3. A section of the encapsulated pancreatic adenoma from Case 1 is shown here.

of her own housework and carry on an intelligent conversation. The recovery, however, has not been complete and may never be. Permanent brain injury in prolonged hypoglycemia is now well known (Baker and Lufkin).

*The Operation.*—Care must be observed that the patient does not come to operation with a blood-sugar value at the convulsive level, for anesthesia, particularly ether, may aggravate the hypoglycemia. It is the writer's practice to give slowly a 5 per cent solution of glucose intravenously during the operative procedure. Exposure is made through a long left rectus incision under cyclopropane anesthesia. A transverse incision extending from one costal margin to the other would, however, be the most direct approach. The gastro-colic omentum is divided through the greater portion of its length. Deep broad retractors are inserted beneath the stomach, pulling it upward. This maneuver lays the pancreas bare through the greater portion of its extent. By running the fingers first over the surface of the pancreas and later seizing it gently between the thumb and fingers, the presence of a tumor can usually be made out with reliable certainty. In order to facilitate accurate palpation of the thicker head of the pancreas, the avascular lateral fold of the second portion of the duodenum should be divided, permitting simultaneous palpation of the pancreas with both

hands from two approaches. The writer has methodically examined the entire extent of the pancreas in this manner before concluding that no insulogenic tumor was present and before undertaking subtotal resection—a procedure

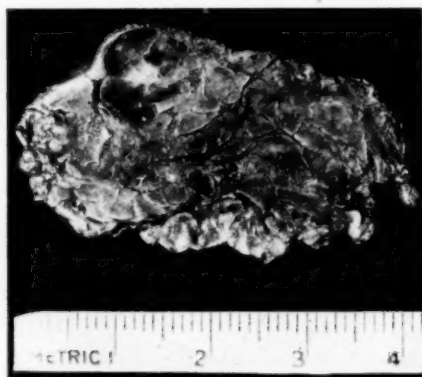


Fig. 4. The tumor from Case 2 surrounded by pancreatic tissue. The microscopic diagnosis was adenocarcinoma. There has been no evidence of recurrence, however. It is not unlikely that this is pathologically the type of "mixed tumor" observed in the parotid gland.

which he has done in two instances (Cases 4 and 5). No tumors were found in the excised pancreas of these two cases. At the site of removal of the tumor or over the resected stump of the pancreas, the omentum is carefully sutured. The wound is then closed, with drainage being established with a soft rubber drain (Penrose) through a stab-wound.\*

During the early convalescence, a 5 per cent solution of glucose in saline solution or distilled water is given quite liberally. The appearance of sugar in the urine indicates that there is no hazard from hypoglycemia. Occasional blood-sugar determinations should, however, be made. Suction applied to an indwelling duodenal tube has been used routinely postoperatively to avoid intestinal distension. Because of the magnitude of the undertaking, an oxygen tent is provided for the patient during the early convalescence. The great fear of the danger of pancreatic

injury has been considerably modified by the experiences which surgeons have had with operative intervention for hyperinsulinism.

Before subjecting patients with chronic hypoglycemia to operation, the efficacy of frequent feedings of a high carbohydrate diet should be evaluated. Patients who exhibit definite improvement on such a regimen need not be operated upon. Hypoglycemic patients who prove refractory to such management and in whom no other cause of the convulsive seizures is apparent should be operated upon.

The details of the case records of the patients upon whom the writer has operated for persistent hypoglycemia follow herewith.

### Case Reports

**Case 1.**—Mr. P. H., aged twenty-eight, hospital number 625929, was admitted March 22, 1934, with the complaint of spells of weakness since May, 1934, and convulsive seizures and periods of unconsciousness dating from February, 1931. He soon learned that eating tended to relieve the spells of weakness and forestall the convulsive seizures. Prior to July, 1933, the convulsive seizures and periods of unconsciousness were relatively infrequent. Since then, despite frequent taking of food, these seizures have occurred once or twice a day. The physical examination was essentially negative. The blood pressure was 135/70.

Examination of the blood and urine revealed no abnormal findings. Four fasting blood-sugars at various times after admission gave the following findings: 15.5, 21.5, 23.0 and 40.0 milligrams of sugar per 100 cubic centimeters of blood. Blood-sugar determinations made during attacks of unconsciousness varied between 15 and 50 milligrams. The sugar tolerance was as follows: fasting blood-sugar, 46 milligrams; at one-half hour intervals afterward, 154, 186, 210, 260. There was no sugar in the urine at any time following the test.

Under cyclopropane anesthesia exploration of the abdomen was done April 30, 1934. A small tumor located on the dorsal surface of the pancreas in its distal third was felt. Because of the difficulty of getting at it, the tail of the pancreas including the tumor was excised. The wound was closed without drainage. The patient made what appeared to be an uneventful convalescence, but returned later with slight fever and presented tenderness below the left costal margin. A diagnosis of subphrenic abscess, probably small, was made, as inferred from the shadow observed on a radiogram after inflation of the stomach and colon with air. Under conservative treatment alone it cleared up and the patient has remained well. There have been no further convulsive seizures and blood-sugar determinations have shown consistently normal values. The tumor was roughly spherical and measured twelve millimeters in diameter. It was reddish-purple in color and was identified histologically as an adenoma of the pancreatic islets.

\*The chief contributing cause of death in Case 5 was probably an eversion for which the wound was strapped. At the time of death, the wound was healed, but in addition to the residual abscess in the splenic hilum, there was evidence in the presence of thin fibrous adhesions of an antecedent peritonitis which probably followed the eversion. Experiences of this sort with wound disruption after resection for gastric cancer, persuaded the writer to undertake closure of the abdominal incision with buried silk—the technic of the closure remaining otherwise the same, save for the substitution of silk for catgut. The results have been very gratifying and have been elsewhere described. (Transactions of the Minneapolis Surgical Society, January 1937.)

## DISEASES OF THE PANCREAS—WANGENSTEEN

This patient has remained well and there have been no more convulsive seizures. Blood-sugar values have all been normal. A small hernia has developed in the incision which should be repaired.

**Case 2.**—Mrs. L. W., aged thirty-seven, hospital number 630202, was admitted to the neurological service on August 14, 1934, with the complaints of weakness and convulsions. The patient was admitted to hospital during a convulsive seizure. There were clonic and tonic contractions accompanied by carpedal spasms. The blood-sugar was found to be 30 milligrams per cent. Intravenous glucose solution was administered and the patient was aroused from a semi-stupor at once. These spells commenced about a year ago, and the patient's husband had learned that the oral ingestion of orange juice helped to awaken her.

The weakness had been so extreme that she had been confined to her bed. There had been complete disorientation and confusion. Her conversation had been unintelligible; the patient had been incontinent. The appetite had always been good.

Two years ago a subtotal thyroidectomy was done elsewhere for an adenomatous goiter without hyperthyroidism. The past history otherwise has no bearing on the present complaint.

Apart from the obviously impaired mental status, the notable physical findings were: (1) moderate emaciation; (2) a persistent adenomatous nodule in the right lobe of the thyroid. The blood pressure was 112/80. Fasting blood-sugars varied between 31 and 66 milligrams per cent. On October 14, 1934, the patient was transferred to the surgical service. Operation under ether anesthesia disclosed a small, reddish-yellow, unencapsulated tumor on the superior and ventral aspect of the pancreas. A frozen section made during the course of the operation was interpreted as a low-grade adenocarcinoma. In view of this histologic finding, a resection of a considerable portion (three-fifths to two-thirds) of the pancreas was done. The omentum was carefully sutured over the site of amputation of the pancreas, and a soft rubber drain was led out through a stab wound. The convalescence was without marked reaction and the patient was retransferred to the neurologic service ten days later.

There have been no recurrences of the convulsive seizures and the patient has steadily improved. The blood-sugars have been consistently normal since operation.

Blood-sugar values have all been normal and the patient has improved materially. She can now do some of her own work. Evidence of mental deterioration is still marked, however. It is to be noted that the patient continues well without evidence of recurrence despite the microscopic diagnosis of adenocarcinoma.

**Case 3.**—W. B., a boy aged eleven, hospital number 650512, was admitted to the University Hospital on July 7, 1936, with the complaint of recurrent convulsive seizures of 17 months duration. These occurred usually before meals and were characterized by clonic convulsions lasting a few minutes; periods of uncon-

sciousness of varying duration had not been unusual. The patient's physician, Dr. R. E. Pray of Fargo, North Dakota, had made a diagnosis of hypoglycemia due to probable hyperinsulinism before the patient was admitted on the pediatric wards under Dr. I. McQuar-

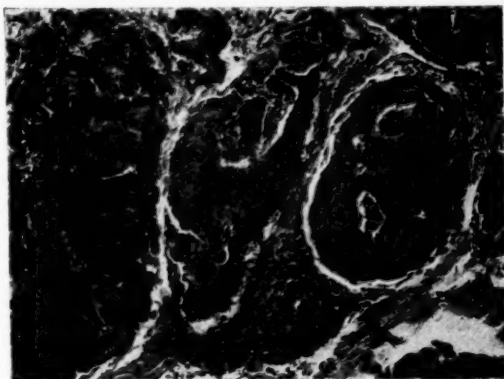


Fig. 5. A section of the pancreatic adenoma from the head of the pancreas in Case 3.

rie's care. On admission here the fasting blood-sugar was found to be 41 milligrams per cent. A convulsive seizure was interrupted by the intravenous administration of a solution of 5 per cent glucose. A trial with frequent feedings of foods rich in carbohydrates failed to avert convulsive seizures or to sustain a normal blood-sugar value.

On July 16, 1936, exploration of the pancreas was made through a left rectus incision under cyclopropane anesthesia. It had been explained to the relatives if a tumor could not be palpated at the time of operation that resection of the pancreas would be a therapeutic procedure of doubtful value. A tumor was felt in the head of the pancreas. The external leaf of the duodenum was divided, and by a combined approach from above and beneath the duodenum, an adenomatous tumor, well encapsulated about 1.5 by 2 centimeters in diameter was shelled out. A number of hemostats were placed and the surgical diathermy current was used to deal with the bleeding points in the deep wound. This tumor on microscopic section proved to be an adenoma. A small swelling had been felt in the tail of the pancreas, so it was amputated. This proved to be a lymph-node embedded within the pancreas. Drainage was employed through a small stab wound to the left of the incision.

The boy had a smooth and uninterrupted convalescence and there was no recurrence of convulsive seizures. All blood-sugar values made after operation were normal. A recent letter from the mother states that the boy has been active in school and has continued well.

**Case 4.**—Mr. F. M., aged twenty-nine, hospital number 623663, was first admitted to the University Hospital on January 7, 1934, with the complaints of attacks

of weakness, perspiration, and increased irritability, with periods of unconsciousness. The patient had an obvious acromegaly of several years standing. The first convulsive seizure occurred in April, 1933, and the patient was taken to Rochester, Minnesota, in an unconscious state. The blood-sugar was 46 milligrams per cent. The patient promptly regained consciousness following intravenous administration of glucose solution. The patient was tried out on a regime of frequent feedings but returned for exploration of the pancreas at a later date. This operation was done by the late Dr. Judd on June 21, 1933. There were no abnormal gross findings in the pancreas. A portion of the tail of the organ was excised but was found to be normal on histologic study. Following his dismissal, the patient gained forty pounds in weight with frequent feedings, but weakness and convulsive seizures still persisted.

On admission to the University Hospital early in 1934, because of the obvious acromegaly as indicated by the large hands and feet, prominent supra-orbital ridges and large nose together with tufting of the distal phalanges (though the sella was normal), cross-fire x-ray treatments were applied to the hypophysis but without evidence of improvement after the lapse of several months.

He was again admitted in the summer of 1934 and at the request of the Medical Service exploration of the pancreas was done July 23, 1934. Dr. Russell Wilder of the Mayo Clinic, who had seen the patient meanwhile, had suggested that a small tumor previously not demonstrated might now have grown to palpable size. A thorough exploration was carried out and the pancreas was freed wherever possible to permit of palpating the organ on both superior and inferior surfaces. No abnormalities could be made out. In the process of exploring the pancreas, the organ was fairly well separated from its bed of adventitious tissue.

After operation until the time of dismissal on August 10, 1934, the blood-sugar did not fall below 74 milligrams per cent and there was no recurrence of hypoglycemic attacks. On August 29, five weeks after the exploration, another convulsive seizure occurred and seizures have continued periodically since.

On September 24, 1934, in a subsequent admission hemorrhoidectomy was done because of rectal bleeding. Ether anesthesia was given to the same depth and for the same length of time as at the previous exploration. On completion of the operation, the patient's blood-sugar was 240 milligrams per cent. A few hours later, it dropped to 72 milligrams per cent, and the following morning the patient had another hypoglycemic convulsion.

The patient meanwhile was again given x-ray treatment to the pituitary gland without elevating the fasting blood-sugar values. Convulsive seizures still continued to occur. Continuous feedings of carbohydrates by an indwelling duodenal tube were tried without effect. Pitressin was also given without improvement. All fasting blood-sugars continued low.

On April 30, 1935, the patient was re-operated upon, a subtotal pancreatectomy being done. It was estimated that seven-eighths of the gland was excised.

The excised tissue weighed 30.5 grams, and showed no evidence of tumor. The postoperative blood-sugar values were all within normal limits. Pneumonia developed postoperatively and the patient died on May 5, 1935, six days after operation. At postmortem examination, pneumonia was found in the right upper lobe. The peritoneal cavity was clean. There was a small hematoma in the residual portion of the pancreas in the curve of the duodenum. Fat necrosis was present at this site. Examination was also made of the pituitary gland. Histologically, the eosinophilic cells appeared to be present in excess of the normal. A cell count made by Dr. A. T. Rasmussen of the Department of Anatomy was as follows: eosinophiles 62 per cent; chromophobes 20 per cent; basophiles 18 per cent.

*Case 5.*—R. Y., two and a half years of age, hospital number 651587, was admitted to the University Hospital on August 24, 1936, with a history of convulsive seizures since the age of four months. The attacks came most frequently before meals and most often in the late afternoon. The patient's mother has learned that the ingestion of sugar helped to avoid attacks. In the convulsive seizures, there were tonic and clonic twitchings which lasted for five to seven minutes. After the convulsion the infant would sleep for about an hour and seemed quite normal afterward.

Physically, the child appeared fairly well nourished, but he was definitely retarded mentally, being able to say only a few words. He was also quite irritable. The extremities were definitely spastic with hyperactive reflexes.

The urine was negative. The hemoglobin was 78 per cent, leukocytes 11,900. The Wassermann was negative, as was also the Mantoux test. The fasting blood-sugar varied between 23 and 42 milligrams per cent. After a glucose tolerance test, the highest blood-sugar value was 90 milligrams per cent observed three hours after the ingestion of the glucose. On one occasion, 40 minutes after the subcutaneous administration of 7.5 cubic centimeters of adrenalin, the blood-sugar was elevated to 134 milligrams per cent; after three hours, it had returned to 26 milligrams.

X-ray films made of the skull revealed evidence of a probable hydrocephalus. In consequence, an encephalogram was made which failed to substantiate that impression. The spinal fluid pressure was 20 millimeters of mercury.

There were frequent convulsive seizures during the hospital stay.

On November 2, 1936, under cyclopropane anesthesia, subtotal pancreatectomy was done, no tumor being felt after careful palpation of the entire length of the pancreas. The pancreatic tissue removed weighed nine grams and appeared grossly normal. There was no evidence of tumor in the excised tissue. It was estimated that a residuum of about two grams of pancreatic tissue remained. Of sixteen fasting blood sugar determinations made postoperatively, all, with few exceptions, were well within normal limits as contrasted with the persistently low values before operation.

Unfortunately, evisceration occurred on November 7,



1936, with protrusion of several intestinal coils. Considerable fluid had been given intravenously during the course of the operative procedure and the abdominal incision could not be closed because of the tense urinary bladder until catheterization had been performed. The intestinal coils were returned into the abdomen at the time of evisceration and the walls were strapped together with adhesive tape, a Penrose drain being led through the wound. The convalescence following evisceration was stormy, but by November 21, 1936, the wound had granulated in nicely and the infant seemed to be doing well. The preoperative fretfulness was no longer apparent, but abscesses developed in the right cubital space and near the left internal malleolus, and in the left parotid gland. Death occurred on December 13, 1936, six weeks after the operation.

No evidence of peritonitis was found at the postmortem examination. There were, however, fibrinous adhesions throughout the peritoneal cavity. In the hilum of the spleen about five cubic centimeters of greenish pus, well encapsulated, was uncovered. The residual pancreatic tissue weighed 7.7 grams—an amount which was considerably in excess of that estimated to be left at the time of operation.

### Comment

Two important clinical problems relating to hypoglycemia still demand solution. (1) The development of diagnostic criteria by which instances of hypoglycemia due to hyperinsulinism may be differentiated from hypoglycemia caused by disturbances of pituitary, adrenal, liver, and other functions not understandable in the present state of our knowledge. Hypoglycemia is not synonymous with hyperinsulinism. (2) Whether extensive pancreatic resection should be done in instances in which a pancreatic tumor fails of demonstration at operation is still debatable, particularly in the light of the limitations of differential diagnostic criteria just described. The recorded instances of complete and permanent success attending subtotal pancreatic resection would strongly suggest the virtue of its application.

Another matter which also requires elucidation relates to the biologic character of some of these pancreatic tumors. Adenomas may be present in the pancreas apparently without causing hypoglycemia; they may also occur in diabetes. Histologically, some of them appear to be carcinomas. Whether they may, like tumors (mixed tumors) in the sister serous gland, the parotid, prove to be biologically benign remains to be seen (Case 2). There are, to be certain, instances of frank insulin producing carcinomas of the pancreas

which metastasize, such as was first reported by Wilder and his associates.

Three successes attending excision of pancreatic insulogenic tumors causing hypoglycemia are here reported.

### Summary and Conclusions

The diseases of the pancreas demanding the intervention of the surgeon are briefly described. Conservative management is advocated for acute pancreatic necrosis. The criteria upon which the lesion may be identified are described. Serous cysts of the pancreas may be satisfactorily managed by marsupialization. There have been no instances of persistent fistula attending external drainage of such cysts in this clinic. Cystadenomatous tumors of the pancreas should be completely excised. The experience of the writer with the treatment of hyperinsulinism is reviewed and three patients are reported who were cured of persistent hypoglycemia by the removal of insulogenic tumors.

### Bibliography

1. Arnsberger, L.: Die Entstehung der Pankreatitis bei Gallensteinen. München. med. Wchnschr., 58 (pt. 1):729, 1911.
2. Babkin, B. P.: Blood sugar concentration and the external secretion of the pancreatic gland. Jour. Am. Med. Assn., 105:1659, 1935.
3. Baker, A. B., and Lufkin, N. H.: Cerebral lesions in hypoglycemia. Arch. Path., 23:190, 1937.
4. Bollman, J. L.: Personal communication.
5. Boyden, E. A.: The sphincter of Oddi in man and certain representative mammals. Surgery, 1:25, 1937.
6. Dragstedt, L. R., Haymond, H. E., and Ellis, J. C.: Pathogenesis of acute pancreatitis (acute pancreatic necrosis). Arch. Surg., 28:232, 1934.
7. Elman, R.: The variations of blood amylase during acute transient disease of the pancreas. Ann. Surg., 105:379, 1937.
8. Elman, R., and McCaughan, J. M.: Collection of entire external secretion of pancreas under sterile conditions and fatal effect of total loss of pancreatic juice. Jour. Exper. Med., 45:561, 1927.
9. Elman, R., and Hartman, A. F.: Cause of death following rapidly total loss of pancreatic juice. Arch. Surg., 20:333, 1930.
10. Engelstad, R. B., and Römcke, O.: Diagnosis of pancreatic stones. Acta radiol., 17:79, 1936.
11. Exner, A.: Zur Kasuistik und Therapie der Pankreaszysten. Wien. klin. Wchnschr., 18:803, 1905.
12. Graham, E. A.: The 1936 Year Book of General Surgery, p. 632. Chicago: The Year Book Publishers.
13. Graham, E. A., and Hartmann, A. F.: Subtotal resection of pancreas for hypoglycemia. Surg., Gynec. and Obst., 59:474, 1934.
14. Jedlicka, J.: Eine neue Operationsmethode der Pankreaszysten. (Pankreatogastrotomie). Abstr. Centralbl. f. Chir., p. 132, 1923.
15. Joslin, E. P.: Quoted by McKittrick.
16. Leven, N. L.: Primary carcinoma of the pancreas. Am. Jour. Cancer, 18:852, 1933.
17. Leven, N. L.: An experimental study: The effect of radium emanation on the pancreas of dogs. Am. Jour. Cancer, 18:899, 1933.
18. Lewis, D.: Acute hemorrhagic pancreatitis; causes of—symptoms, and treatment. New York State Jour. Med., 36:1015, 1936.
19. McKittrick, L. S.: Surgery and diabetes mellitus. Jour. Med. Soc. New Jersey, 33:523, 1936.
20. McCaughan, J. M., and Broun, G. O.: The value of partial pancreatectomy in convulsive states associated with hypoglycemia. Ann. Surg., 105:354, 1937.
21. Opie, E. L.: The etiology of acute hemorrhagic pancreatitis. Bull. Johns Hopkins Hosp., 12:182, 1901.
22. Rich, A. S., and Duff, G. L.: Experimental and pathological studies on the pathogenesis of acute hemorrhagic pancreatitis. Bull. Johns Hopkins Hosp., 58:212, 1936.



23. Simon, H. E.: Surgery in treatment of hyperinsulinism. *South Surgeon*, 3:211, 1934.
24. Wangensteen, O. H.: Pancreatic cyst. *Journal-Lancet*, 50:3, 1930.
25. Wangensteen, O. H.: Acute pancreatic necrosis with comments on diagnosis and therapy. *Minn. Med.*, 15:201, 1932.
26. Wangensteen, O. H.: The surgery of hyperinsulinism. *Minn. Med.*, 18:259, 1935.
27. Wangensteen, O. H., Leven, N. L., and Manson, M. H.: Acute pancreatitis (pancreatic necrosis): An experimental and clinical study with special reference to the significance of the biliary tract factor. *Arch. Surg.*, 23:47, 1931.
28. Whipple, A. O., Parsons, W. B., and Mullins, C. R.: Treatment of carcinoma of the ampulla of Vater. *Ann. Surg.*, 102:763, 1935.
29. Wilder, R. M., Allen, F. N., Power, M. H., and Robertson, H. E.: Carcinoma of islands of pancreas; hyperinsulinism, and hypoglycemia. *Jour. Am. Med. Assn.*, 89:348, 1927.
30. Zoepffel, H.: Das akute Pankreasödem—eine Vorstufe der akuten Pankreasnekrose. *Deutsche Ztschr. f. Chir.*, 175:301, 1922.

## ACUTE SUPPURATIVE OTITIS MEDIA AND MASTOIDITIS\*

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IN bringing to your attention some observations upon otitis media and mastoiditis, let me emphasize that we are dealing only with the acute suppurative types, leaving out of consideration the acute tubal catarrhs, the acute exacerbations of chronic otitides, and, of course, the chronic conditions themselves. By no means are these observations wholly original or even new, and to many of you they are known and commonplace. They have been gleaned from the literature, from the class-room, from hearsay, and from our own limited experience. Year after year we have accepted them at their face value, and have treated our patients on that acceptance. We thought it might be of interest to analyze positive observations from the standpoint of our own series of cases, and thus in the light of that evaluation discover the stability of these clinical assertions. In this analysis, we have used the cases of acute otitis media and mastoiditis that have come under our observation in the past ten years.

"The majority of cases develop as a sequence to measles, scarlet fever, influenza and colds"<sup>1</sup> is our first observation taken from the literature. In recent years with the diminution in the number of and the severity of epidemics of exanthematous diseases in our community, the leading causes of acute otitis media are influenza and the common head cold. We have used here the term, head cold, to include also acute sinusitis, as all authorities practically agree that any severe head cold of over five days' duration has invaded the nasal sinuses. Considering the primary etiological factors in our series, the percentages are as follows: head colds, 56.9 per cent; influenza, 31.7 per cent; measles, 6.1 per cent;

acute tonsillitis, 1.9 per cent; scarlet fever, 1.6 per cent; and the miscellaneous causes of trauma, nasal pack, and swimming, 1.5 per cent.

"The predisposing causes are chronic catarrhal states of the upper respiratory tract, sinusitis, infected tonsils and adenoids and chronic infection of Rosenmueller's fossa."<sup>2</sup> There is no question that the effect the exciting causes have upon an individual is influenced by the local conditions present in the nose and throat, together with his general condition which we call resistance to infection. In evaluating this observation, 44 per cent of our patients either had had their tonsils and adenoids removed, or their tonsils declared negative to infection, while 56 per cent had infected tonsils and adenoids.

Dr. M. M. Cullom,<sup>1</sup> in studying the association of sinus disease and middle ear infections, believes that tonsils and adenoids are much less important than sinusitis as a cause of acute suppurative otitis media. He found that 85 per cent of his acute otitides coming to mastoid operation had demonstrable sinus infection. Fifty-two per cent of the patients in our series had had severe head colds or sinusitis and had had the tonsils and adenoids removed or had had the tonsils classified as normal. This percentage included all ages, while in the first two decades of life when tonsils and adenoids are more likely to be diseased, we found that 44.5 per cent of the patients with acute otitis media had sinus involvement in which the tonsils and adenoids were not factors. In view of these findings, the incidence of sinusitis and its relation to otitis media was not influenced to any great extent either by the presence or absence of infection in the tonsils and adenoids.

"Cases of acute otitides are most frequent dur-

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ing January, February, and March when there is a prevalence of acute colds engrafted upon subacute or chronic catarrh of the mucous membrane of the nose and throat, and also due to the prevalence of exanthematous disease."<sup>6</sup> To those of us who live in a more northern climate, the extension of otitis media into the spring months would be expected. In our series, the highest number was observed in April with 14.8 per cent, and the lowest in June with 2.9 per cent. The higher incidence of cases from January to April must be influenced by lowered resistance following a long winter, together with the "stepping-up" increase in virulence of the organisms so characteristic of epidemics. The influence epidemics have upon the incidence of acute otitis media can be readily appreciated when we say that 29.1 per cent of all cases seen during the past ten years were observed in 1935. In our community at that time we had a definite epidemic of both influenza and measles.

"Adenoidectomy, thoroughly performed, will reduce the incidence of otitis media in children 95 per cent."<sup>5</sup> In our series of cases, the incidence of infected tonsils and adenoids in children fifteen years or under with otitis media was 67.7 per cent as compared to 32.3 per cent who had had their tonsils and adenoids removed.

The analysis of our cases was carried further as to the effects of spontaneous rupture of the tympanic membrane and myringotomy had on the outcome of the cases. Let me add that the procedure of myringotomy is used in preference to stab paracentesis. As the purpose of the operation is to establish adequate drainage, one can readily see that a carefully placed incision involving practically a third of the tympanic membrane would supply that prerequisite, whereas a stab wound the size of a pinhead would not. Furthermore a curvilinear type of incision, acting as it does like a valve, would stay open longer and would less likely need repetition. In our series, 72.4 per cent had spontaneous rupture, and of this number 30.2 per cent required mastoidectomy, while 27.6 per cent had myringotomy performed, and of this group, 17.8 per cent had to have the operation. Another interesting finding was the effect spontaneous rupture and myringotomy had respectively on the duration of the discharge in those cases in which that information was definitely known. The average duration of discharge in those with spontaneous rupture was

twenty-one days, while in those undergoing myringotomy, the average duration was fifteen days.

Besides the general measures employed in the treatment of acute otitis media, we have always used the dry wick treatment, instructing the attendants thoroughly in the details of the procedure. The use of antiseptics locally in the acute process does not seem logical. We have a small chamber filled with pus under pressure which is forcing the discharge through a small opening in the tympanic membrane. It is usually just large enough to allow the pus to escape, and it is hard to conceive how the medication can overcome this pressure by gravity alone and get into the middle ear. Even if a small amount did get in, its effect would be negligible. The prescribing of drops to clear an acute case eases the doctor's conscience, and renders the care of the patient by the attendants careless, due to the feeling that when they have instilled the drops they have done everything necessary.

Roberts<sup>3</sup> observed that of his cases of acute otitis media, the mastoid complications averaged only 10 per cent as compared to our 23.6 per cent, while only 16 per cent of his patients had spontaneous rupture of the membrane compared to our 72.4 per cent. He bases his low percentage of mastoid complications on the early drainage obtained by myringotomy. The variance in our figures can be explained, (1) by the belief of our people that the care of an ear is a simple matter; (2) by the popular opinion that spontaneous rupture is a natural sequence to be awaited; (3) by the fact that the local doctor is first consulted and rightly so; and (4) by the nature of our position as otologist in a clinic, we are only consulted when something goes wrong. The 23.6 per cent representing the high incidence of our mastoid complications can also be explained partly at least by the fact that we only saw the patients who developed suspicious mastoid symptoms, and those with otitis media who responded to treatment were not contacted, but were allowed to run their course at home.

"The higher incidence of surgical mastoiditis in spontaneous perforation of the drum membrane may be due to the fact that the more fulminating severe infections usually rupture early, while the milder infections less likely to lead to complications have time to come to the hospital and be opened a day or two after onset."<sup>4</sup> Classifying

measles, scarlet fever and influenza as fulminating, and I believe rightly so, 84.9 per cent of our cases of otitis media caused by these three diseases ruptured spontaneously, while the milder infections as exemplified by head colds, acute tonsillitis, and trauma with secondary infection showed spontaneous drainage in 70 per cent. "We like to believe that early paracentesis prevents complications, but it is difficult to prove accurately."<sup>4</sup> In our myringotomized cases over the ten-year period, the percentage that developed mastoid complications in spite of that procedure was only 9 per cent less than those who had spontaneous rupture. The one point that is definite, however, is that myringotomy does relieve pain, and, knowing that, many practice early incision in all cases. Granting that myringotomy has been properly performed, we wonder at times if too early incision does not necessitate repetition of the procedure. We have been taught to incise when bulging is present, and it comes to our mind that if there is not sufficient fluid in the tympanum to cause bulging, the incision, having no force to keep it open, seals rapidly. If the infection continues, we have the recurrence of fluid, the renewal of pain, and the necessity of another incision. Many times in these early cases drainage can be established through the eustachian tube, thus relieving the pain. Whatever our thoughts on the matter, drainage is a definitely accepted surgical principle. The application lies in the surgeon's judgment.

As we have mentioned before, the influence epidemics have upon the incidence of otitis media is also strikingly evident in its effect upon the number of surgical mastoids. Of all the mastoidectomies that have been performed by us in the past ten years, 46.9 per cent were done in 1935, a year of influenza and measles. In contrast to the effect myringotomy had in this epidemic of 1935 to that in the other years, we find that the number of the myringotomized patients who developed surgical mastoiditis was 20 per cent less in that year as compared to only 9 per cent less over the whole ten-year period. We feel this difference can be partially explained by the fact that people in the presence of epidemics become more health conscious, and thus seek attention earlier.

"The physician and patient, both aware of the proximity of intracranial structures to the middle ear spaces, are both inclined to demand early

mastoid operation, when pain, fever, and mastoid tenderness of an early otitis media do not promptly subside after myringotomy."<sup>2</sup> Only in rare instances is a mastoidectomy an emergency measure. With no signs of intracranial invasion the decision can be reached with deliberation, and the late operation is the one of choice when the maximum localization by nature has taken place. In our series, the average length of time from the onset of the otitis media to the time of the mastoidectomy was twenty-eight days. This certainly does not indicate the need for emergency measures. On the contrary, we do not mean to encourage surgical procrastination either. Excluding those cases in which intracranial and septicemic symptoms appear early, most of our emergency mastoidectomies have been in the neglected cases. Practically every acute otitis media at its inception has mastoid tenderness at least over the antral region, with many showing cloudiness of the mastoid by x-ray. These findings are due to the swelling of the muco-periosteal lining of the mastoid cells and do not require operation. In addition to the factors already mentioned, the progress of the condition from this stage is influenced by the pneumatization of the mastoid, complications being less frequent in the completely pneumatized. Many times at operation the explanation is evident why that particular patient needed operation, namely, the finding of a small antrum which could easily be blocked off from the middle ear by the infection with the resulting retention of discharge in that area and extension into the remainder of the mastoid cells. Originally there is no barrier that requires force or pressure to overcome before the infection can travel from the middle ear to the antrum, but there is a channel, the aditus ad antra, that is always open. This explains the antral tenderness that appears early in acute otitis media.

"Some operators apparently believe that a mastoidectomy can always cut off every communication between a tympanic infection and the brain if properly timed and skillfully done. Direct extension through the mastoid by necrosis, decalcification, and destruction of bone is generally accepted as the route to the brain most frequently taken by a tympanic infection. This is the only route the infection can take that will be affected to any great degree by a simple mastoidectomy."<sup>7</sup> This process requires time, and in

that given time nature can attempt to localize the spread, and the surgeon can deliberate as to the best time to aid nature to prevent further spread. Mastoid surgery will not aid much in those cases in which intracranial complications are due to the extension by the hematogenous route or by septic emboli from the middle ear.

The public has been educated to the fact and rightly so that an earache and its possible consequences are dangerous. From the medical standpoint, every ear should be considered dangerous until healed. To many, doctors included, an otitis media is not serious as long as the ear is discharging. The fallacy lies in the fact that it is many times the mastoiditis which has developed that is keeping up the discharge. It is also commonly believed that otitis media and mastoiditis run to a definite pattern, but in that belief the neglect of proper treatment for an in-

dividual case can develop. In our treatment we must first consider the possible potential fatal consequences in cases of acute suppurative otitis media and acute mastoiditis, and then the factor of hearing. We know that proper care in childhood is one of the foremost factors in the prevention of deafness later in life. With these two sequelæ in mind, we have attempted to present an analysis of a few observations.

### Bibliography

1. Cullom, M. M.: Association of sinus disease and middle ear infections. *Jour. Am. Med. Assn.*, 103:1695, (Dec. 1) 1934.
2. Laff, H. I.: Diagnosis of acute mastoiditis. *Colorado Med.* 32:202, (March) 1935.
3. Roberts, E. R.: Observations in acute suppurative otitis media. *Eye, Ear, Nose and Throat, Practical Medicine Series*, p. 323, 1931.
4. Shambaugh, George E.: Comments in *Eye, Ear, Nose and Throat, Practical Medicine Series*, p. 347, 1935.
5. Turnley, William H.: The results of 76,000 adenoid and tonsil operations. *Laryngoscope*, 47:1, 1937.
6. Weaver, Daniel Witwer: Acute purulent otitis media. *Eye, Ear, Nose and Throat Monthly*, 12:33, (Feb.) 1933.
7. Wood, V. V.: Acute mastoiditis: early operation or delayed? *Ann. Otol., Rhin. and Laryn.*, 42:240, (March) 1933.

## IMMUNIZATION AGAINST THE COMMON DISEASES OF CHILDHOOD\*

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GREAT strides have been made in the reduction of the morbidity and mortality due to the contagious diseases of childhood. Certainly immunization procedures against some of the infectious diseases have been the greatest factor in this reduction. Through public education, radio talks, newspaper and magazine articles, as well as education through the practicing physician, public health agencies and clinics, parents have become coöperative and eager to have their children protected. It is our duty not to make too extravagant claims for these immunizations. Therefore, it is well for us to study the present status of the procedures commonly used.

1. *Smallpox*.—We are all familiar with the earliest form of immunization: vaccination against smallpox and how its use has practically eliminated the disease. The best age for vaccination is between the sixth and twelfth months of life. This affords early protection and minimal reactions.

The general procedure is to cleanse the skin with acetone or ether; in boys, at the point over

the insertion of the deltoid muscle of the left arm; in girls, the outer aspect of the left thigh. A drop of virus is placed on the cleansed area and one of the approved technics: multiple puncture, pressure or scratch, may be used. Multiple puncture method claims more takes and smaller scar formation. The excess virus is wiped off. No covering is necessary until the pustule develops, when a dressing of sterile gauze is advisable at all times to keep out water and to prevent contamination of the pustule. If no pustule develops within ten days re-vaccination should be performed. A successful reaction gives immunity for from four years to life, but during epidemics revaccination is advisable. There are some who advocate the intradermal method, but this not in common practice as yet. Rivers,<sup>22</sup> using a cultured virus administered by intradermal injections, claims safety against contamination, no scab or scar formation, and no need for protection at the site of treatment.

2. *Diphtheria*.—Statistics and experience prove that immunization against diphtheria should be a routine procedure. About 90 per cent of young children are susceptible and need

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no Schick test, but in older children and adults, a preliminary Schick test is advisable to determine the need for immunization.

The logical time for immunization in infants is between the ninth and twelfth months of life. If given previous to the sixth month the injection may be ineffective due to the neutralizing action of the antitoxin which has been transferred to the child from the immune mother.

Various preparations, notably toxin-antitoxin, ana-toxin, toxoid and alum precipitated toxoid, have been used with success. Recent studies have proved that 0.5 to 1 c.c. (varying with different preparations) one dose alum precipitated toxoid give approximately 95 per cent immunity within two to six months.

All children who have been exposed to the infection and have a positive Schick test should be given 1,000 units of diphtheria antitoxin intramuscularly, but care must be taken to see that the child is not sensitive to horse serum.

Some adults and children over eight years of age are so sensitive (allergically) to the protein of the diphtheria bacillus that the injection of the usual dose of the toxoid causes severe local and general reactions. This sensitivity can be detected with the use of the sensitivity test, which consists in the intracutaneous injection of 1 c.c. of toxoid. If within three days an area of redness measuring more than one-half inch in diameter develops at the site, it is advisable not to administer the usual dose of toxoid for immunization. These toxoid-sensitive persons can be immunized by giving three subcutaneous injections of the toxin-antitoxin, or two or three intracutaneous injections of one-tenth the usual dose of alum precipitated toxoid at weekly intervals.

Löwenstein of Vienna<sup>14</sup> advocates the percutaneous method, using an ointment which contains both toxoid and unfiltered culture of dead diphtheria bacilli. The ointment is rubbed into the skin. This preparation is not available commercially in this country, but it will be interesting to watch for a possible perfection of the new method. If effective amounts of toxoid can be gotten into the blood in this manner, the use of the ointment will be the method of choice.

Fitzgerald<sup>8</sup> reports that from 1927 to 1934 there was a total of 121,000 persons immunized in Toronto, and that in 1934 only eighteen cases of diphtheria were reported; and from January,

1934, to March, 1935, not one death from the disease was reported. Following this widespread immunization there has been a great decline in the mortality and morbidity from diphtheria.

However, diphtheria immunization is worthless unless it is checked with a subsequent Schick test. While, with the one dose of alum precipitate, 90 to 95 per cent will be immune, the five or ten per cent who are not immunized would have a false sense of security. Those showing a positive reaction to the Schick test six months following the immunization should be given additional toxoid until the reaction becomes negative. The immunity lasts from six to sixteen years.<sup>4</sup>

3. *Scarlet Fever*.—Natural immunity to scarlet fever is found in about 50 per cent of children and in a somewhat larger percentage in adults. Inherited immunity lasts from six to eighteen months. Children should be Dick tested between the ages of 18 months and two years. The Dick test has been accepted by many investigators as a reliable index of immunity. A negative test assumes the child is immune to scarlet fever.<sup>5</sup>

W. Heesen and B. Ruckert<sup>9</sup> in 1936 told of their experience with Gabritschewsky toxin, which is made up of a culture of hemolytic streptococci from scarlet fever cases, the preparation being treated with formaldehyde and the streptococci killed. One c.c. contains 500 million dead streptococci. For six years they found that one c.c. of this toxin intramuscularly gives adequate protection against scarlet fever, without any complications. They have not obtained similar results with any of the other toxins which were tried. There are no further reports on the use of this toxin.

To actively immunize against scarlet fever 25,000 S.T.D. of Dick toxin in 2 c.c. ointment has been used by Martner<sup>17</sup> with 66 per cent immunity production. Scarlet fever toxoid has also been used, but not extensively. The most favorable method consists in the subcutaneous injection of five increasing doses of scarlet fever streptococcus toxin at weekly intervals, approximating 140,000 S.T.D. Koehler<sup>11</sup> states that Dick tests on 5,700 children who had received the five doses of immunizing toxin gave 93.5 per cent negative reactions. The case rate in the completely immunized was 2.3 per 1,000, while the



rate in the ordinary elementary school population was 60 per 1,000. He observed the following reactions: 3 per cent severe systemic, 15 per cent moderate systemic, 16 per cent mild systemic, 23 per cent local, and 43 per cent none. All children recovered rapidly and completely from all reactions.

E. S. Platou<sup>19</sup> in a study of medical literature reported an annual incidence of 1.65 per 100,000 among susceptibles inoculated in accordance with the recommendations of the Scarlet Fever Committee, and 2,317 annual case incidence per 100,000 in unimmunized control cases.

Anderson<sup>1</sup> reports only seven cases of scarlet fever among 1,360 immunized nurses, compared with ninety-eight among 667 susceptibles, and that 89 per cent of a group originally negative were still negative four years later. These attack rates indicate clearly that toxin injections confer a high level of protection.

All immunized children should be checked with a subsequent Dick test within one to two years. If the test is still positive, additional toxin should be given.

The Committee on Prophylactic Procedures Against Communicable Diseases of the American Academy of Pediatrics does not recommend active immunization by scarlet fever streptococcus toxins as a public health measure because local and general reactions are frequent and also the degree and duration of the immunity have not been definitely established. A severe reaction can be definitely reduced, or even eliminated, by dividing and increasing the number of doses of the toxin.<sup>20</sup> Parents should be told the possibilities, and at this time we should not promise too much. However, if we can reduce a severe and expensive illness, a long isolation in quarantine, and produce a lowered incidence of complications and sequelae, immunization for scarlet fever deserves more extensive use.

4. *Pertussis*.—Unlike so many of the other infectious diseases of childhood, there is no natural immunity to whooping cough.

In 1933 Madsen,<sup>16</sup> using vaccine of the State Service Institute at Copenhagen, reports the results of two epidemics. He found the mortality of the vaccinated group one-sixteenth of that of the non-vaccinated group.

Sauer<sup>23</sup> reports on five and one-half years' experience with a vaccine prepared from human blood, reporting that the patient will require a

total dosage of 8 to 12 c.c. It is given in three weekly hypodermic injections as follows: 1 c.c. in each deltoid region the first week, 1.5 c.c. in each triceps region the second, and 1.5 c.c. in each biceps region the third week. A transient local erythema at the site of injection seems to be desirable. It usually disappears within a few days. Sauer concludes that if his injections are given three months before exposure, 70,000 to 80,000 million organisms conferred immunity against whooping cough; and in a progress report that has been made on pertussis immunization study in Grand Rapids, Michigan, which included 1,592 children (712 in the test group and 880 in the control group) there have been sixty-seven cases of whooping cough, of which number sixty-three occurred among the controls.<sup>10</sup>

Reading<sup>21</sup> reports 94 per cent of the children immunized with the Sauer method have escaped the disease, so apparently it confers considerable immunity. It is best to immunize early, between the seventh and tenth months of life, as it takes four months to develop immunity with Sauer's vaccine. Children exposed without benefit of immunization or before full development of immunity, may be given Krueger's antigen.

The experience of Niemans and Aldrich<sup>18</sup> with this antigen indicates that although the prophylactic effect is more certain, the antigen apparently has a definite effect on modifying and shortening most pertussis infections. This fact is particularly true when the antigen is given early in the attack or before the onset of the cough.

Toomy,<sup>24</sup> very recently, reports the use of pertussis mucoid material injected as a vaccine into children ill with the disease. There seemed to be a shortening of the length of the attack and a decrease in the number of paroxysms and coughs. He obtained much better results than with the use of the various B. pertussis vaccines. The results of further study and experimentation with this material should be interesting. However, no satisfactory test has yet been devised to determine susceptibility or immunity to pertussis.

5. *Measles*.—There is no method of active immunization against measles but the prophylactic and therapeutic properties of adult blood serum and of convalescent serum have been confirmed by various authors.

Thirty c.c. of normal adult blood or 20 c.c. of normal adult serum or 10 c.c. of human blood serum from a person recently convalescent from

the disease may be used. If injected intramuscularly within five days after exposure, it may protect against the disease. If immunity isn't complete only a mild form of the illness develops.

Finkelshteyn<sup>7</sup> of Russia and McKhann et al<sup>15</sup> in the United States advocate the use of placental extract. This gives results equal to, if not better than, convalescent or adult serum. There is a commercial product now available for prophylaxis and treatment called "measles globulin," derived from placental extract.

Eley<sup>6</sup> of Boston recommends placental extract (immune globulin human):

1. To confer an active and lasting immunity by allowing strong healthy children to contract the disease, but modify its severity and preventing complications by administering only one injection of 2 c.c. of the extract.

2. To confer a passive immunity in children exposed in institutional outbreaks and to children who are very young, debilitated, tuberculous, or acutely or chronically ill. It is given for a protection of several weeks' duration or until the patients are able to withstand a "modified infection." Two injections of the extract are given, 2 c.c. as soon as an exposure to measles has occurred, and a second dose of 2 c.c. four days later.

6. *Poliomyelitis*.—Kolmer et al<sup>12</sup> and Brodie and Park<sup>3</sup> used different preparations of a suspension of spinal cord from monkeys which had received an inoculation with sodium ricinoleated virus. Thousands were inoculated and success claimed in establishing immunity.

Leake,<sup>13</sup> Medical Director of the United States Public Health Service, reported that twelve cases of poliomyelitis developed directly as a result of Kolmer's immunizing agent and concluded that the facts as presented render the further use of poliomyelitis virus for human vaccination undesirable at the present time.

Convalescent serum has been of some value in producing passive immunity and is therefore an aid in the treatment of the disease.

7. *Chickenpox and Mumps*.—Convalescent serum from individuals recently recovered from both chickenpox and mumps has been used to prevent both of these diseases. Their value is not absolutely proven and the indication for such use is infrequent due to the mildness of these infections.

## 8. *Typhoid Fever, Tetanus and Rabies*.—

These three infections, although rare, may be prevented by proper use of available vaccines.

Tetanus toxoid has been developed during the past few years and this product bids fair to supplant the older methods of prophylaxis against tetanus infection.

Bergey<sup>2</sup> used a single dose of alum precipitated toxoid followed by antitoxin, the content of which is similar to that of three injections of regular toxoid. There is no question but that it is an active immunizing agent. It remains to be seen to what extent it will receive practical application.

An effort has been made to review very briefly the current status of immunization against the common diseases of childhood. Certainly there is a group of precise indications for the application of specific agents and no physician has the right to withhold from his patients the specific protective methods which have been proven safe.

## Bibliography

1. Anderson, G. W.: Present status of scarlet fever prevention. *New Eng. Jour. Med.*, 213:203-208, (Aug.) 1935.
2. Bergey, D. H.: Active immunization against tetanus infection with tetanus toxoid. *Jour. Infect. Dis.*, 55:72, 1934.
3. Brodie, M., and Park, Wm. H.: Active immunization against poliomyelitis. *Jour. Am. Med. Assn.*, 105:1089, (Oct. 5) 1935.
4. Cooke, Jean V.: Active artificial immunization in diphtheria. *Jour. Pediat.*, 9:646, (Nov.) 1936.
5. Dick, George F.: Scarlet fever. *Kentucky Med. Jour.*, 29:172, 1931.
6. Eley, R. C.: Placental extract in the prevention of measles. *Jour. Mich. State Med. Soc.*, 35:769, (Dec.) 1936.
7. Finkelshteyn, V. A.: Placental serum in measles. *Sov. Paediat.*, 3:34, 1934.
8. Fitzgerald, J. G.: Diphtheria prevention, methods and results. *Canada Pub. Health Jour.*, 27:53, (Feb.) 1936.
9. Heesen, W., and Ruckert, B.: Scarlet fever prophylaxis. *Munch. Med. Wehnschr.*, 82:1838, (Nov. 15) 1935.
10. Kendrick, P., and Eldering, G.: Progress report on pertussis immunization. *Am. Jour. Pub. Health*, 26:8, (Jan.) 1936.
11. Koehler, J. P.: Results of scarlet fever immunization. *Am. Pub. Health*, 25:1359, (Dec.) 1935.
12. Kolmer, J. A., Rule, Anna M., and Klugh, G. F., Jr.: Successful method for vaccination against acute anterior poliomyelitis. *Jour. Am. Med. Assn.*, 104:456, (Feb. 9) 1935.
13. Leake, J. P.: Report on poliomyelitis following vaccination. *Jour. Am. Med. Assn.*, 105:2152, (Dec. 28) 1936.
14. Lowenstein, E.: New methods in diphtheria prophylaxis. *Jahresk. f. ärzt. Fortbild.*, (Oct.) 1932.
15. McKhann, Chas. F., Green, Aida A., and Coady, Harriet: Factors influencing effectiveness of placental extract in prevention and modification of measles. *Jour. Pediat.*, 6:603, (May) 1935.
16. Madsen, Thorvald: Vaccination against whooping cough. *Jour. Am. Med. Assn.*, 101:187, (July 15) 1933.
17. Martner, Edgar E.: Immunization to scarlet fever by the inunction method. *Jour. Pediat.*, 1:555, (Nov.) 1936.
18. Munns, G. F., and Aldrich, C. A.: Hemophilus pertussis endo-antigen Krueger. *Jour. Pediat.*, 5:590, (Nov.) 1934.
19. Platon, E. S.: Scarlet fever prevention by immunization. *Jour. Pediat.*, 5:531-534, (Sept.) 1934.
20. Rappaport, Benj.: Active immunization to scarlet fever with less reaction. *Jour. Am. Med. Assn.*, 106:1076, (March 28) 1936.
21. Reading, Boyd: Immunization with pertussis vaccine. *Texas State Jour. Med.*, 31:213, (July) 1935.
22. Rivers, T. M., and Ward, S. M.: New smallpox vaccine. *Jour. Exper. Med.*, 62:549, 1935.
23. Sauer, Louis W.: Immunization against whooping cough. *Am. Jour. Dis. Child.*, 49:69, (Jan.) 1935.
24. Toomey, J. A.: Newer aspects of whooping cough problem. *Jour. Pediat.*, 10:472-485, (April) 1937.

## ACUTE APPENDICITIS IN CHILDREN UNDER TWELVE YEARS\*

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IN looking back over my experience in surgery, appendicitis in children, particularly in very young children, has afforded a difficult problem. To fail in the diagnosis of acute appendicitis in a child has always been a source of anxiety. The counsel of a pediatricist on whom one can rely and who is accustomed to dealing with the various conditions in the abdomen in childhood is not always available. Sometimes when such counsel is at hand the diagnosis of appendicitis remains puzzling. Sometimes after the arrival at a diagnosis of acute appendicitis the proper procedure is not clear cut.

During the past year, therefore, I have made a survey of 200 case records of our hospitals in an effort to analyze the combined experience of our surgeons in Duluth.

In this series there was but one patient one year old operated upon for acute appendicitis and she recovered. There were no cases in the second year of age, and only two cases at the ages of two and one-half to three years.

Seventy-one per cent of these 200 cases occurred between eight and twelve years of age. The curve of incidence (Chart I) rises rapidly after the age of six.

Acute appendicitis may occur at any age from the cradle to the grave. While the incidence rises markedly after the age of six, the heavy incidence of acute cases is in the period of youth and adult life, as is well known. An effort will be made to analyze the results of various methods of treatment in childhood and to obtain some idea of the prognosis at different age levels within the group.

Appendectomy in these 200 cases was the rule. Some cases were seriously complicated with peritonitis and drainage only was done in fourteen such cases, with but one death. In the mortality list one case had drainage only. The rest had appendectomy and drainage.

In the matter of diagnosis,—in all cases diagnosed preoperatively as "ruptured" or "gangrenous" or "peritonitis," the operative findings

were confirmatory. Of course, gangrene, perforation, abscess, peritonitis or free pus were frequently found at operation when not diagnosed preoperatively.

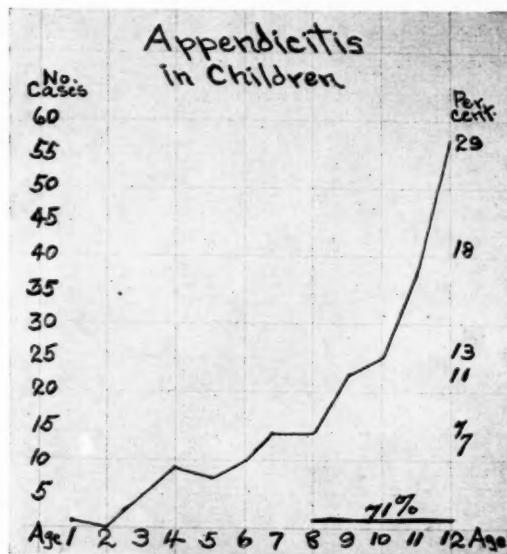


Chart I.

A gangrenous appendix and signs of peritonitis were found at operation in 70 per cent of the series.

The leukocyte count is apparently not a guide as to seriousness. In forty cases it showed an average of 23,000. General averaging in this manner, however, gives little information. For instance, the maximum white counts in the mortality list of nine ranged widely from 8,400 to 41,000. In the group of fourteen cases where drainage alone was done, with but one death, the white counts were all over 10,000. The differential counts in the mortality group gave polymorphonuclear counts of 72, 79, 81, 84 and 95 per cent. The differential counts in the drainage only group were all over 80 per cent. Prognosis, according to the Gibson Chart, was worked out on five cases in the mortality list where the information was available, and the prognosis was wrong in all five.

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Catharsis during an attack seemed to play no informative part in these 200 patients, judging by the records of only one death in nine patients given cathartics. However, if all the records had contained positive or negative statements on this point in particular, and especially at what stage in the acute attack catharsis was given, some definite information might have been obtained.

Inasmuch as removal of the appendix was the rule in these cases, it is interesting to study the results in the mortality list as compared to the drainage only list a little more fully.

Of nine patients who died, all but one had appendectomy. In the fourteen cases of drainage only and no appendectomy, there was but one death. If we consider the time intervals from the onset of attack to the time of operation in these two sub-groups, we find in the mortality list of nine the intervals were: Twenty-four hours in three cases; thirty hours in one case and an interval of three, four, six, ten and twelve days in one case each. In the cases listed as drainage only, the interval was over three days in every case and most of the intervals were ten to fourteen days, which suggests that abscess formation was better established and the indications for drainage were more definite.

There were twenty cases of abscess recorded (10 per cent of the total group). In nine of these twenty cases appendectomy was done; in ten, drainage only. One in this group died. There is nothing here as a guide to the better method of procedure. Current practice is probably to remove the appendix if it is easily accessible without breaking up limiting adhesions and contaminating the uninvolved peritoneum.

Nine deaths in 200 cases show a mortality rate of 4.5 per cent for the whole series. The figures change, however, if certain groups are taken separately. Seventy-one per cent of these children were eight to twelve years old and the mortality in this age group was only 1.4 per cent. If, however, we consider the fifty-eight cases (29 per cent of the total) under eight years, we find seven deaths, making a mortality of 12.7 per cent. Six of these seven deaths were in girls. Apparently the lesson to be observed is, if the patient is a girl under eight and acute appendicitis is diagnosed, the greatest conservatism should be exercised at operation.

In the group of fifty cases diagnosed gangren-

ous appendicitis, five died, making a mortality of 10 per cent. One boy and four girls were the victims in this group and they were all under eight years of age. The leukocyte counts here were nearly all over 12,000, and 70 per cent of the counts were over 15,000.

In the cases termed "gangrene," "free pus," "peritonitis," or "not localized" we have the four most dangerous types found at operation. The mortality in this group is 9.8 per cent, but, worse still, if we take each subgroup separately, the mortality rises, namely: free pus cases 18 per cent; peritonitis cases 29 per cent; not localized cases 66 per cent.

### Complications

Secondary abscess occurred in several cases, a few of which ruptured spontaneously into the rectum and others required secondary drainage. Two girls, aged 11 and 12, had intestinal worms. One of these died with peritonitis and round worms as a complicating factor. The other had pinworms.

One girl of twelve who was operated upon and recovered had gallstones and a hard pancreas as well. A girl of nine developed bilateral suppurative parotitis, with incision and drainage. One girl of twelve, who was operated upon and recovered, had a suppurative parotitis and also a cul-de-sac abscess which was drained through the rectum. Several cul-de-sac abscesses were drained in this manner. A fecal fistula was present in one case. One boy of eleven had an appendiceal abscess drained four years preceding his second operation for acute appendicitis.

### Summary

In a review of 200 cases of acute appendicitis in children of twelve years or under, the incidence was found to increase rapidly after the age of six, so that, at the age of twelve, it is six times that at the age of five or six.

Acute appendicitis was comparatively rare in this group in the first two years of life.

The time interval between onset of attack and operation was longer in the cases where drainage only was performed. The indications for simple drainage in these cases was more definite.

There were nine deaths in 200 cases—a mortality rate of 4.5 per cent. There was but one death in fourteen simple drainage cases.

The four most dangerous types are those



termed "gangrene," "free pus," "peritonitis" and "not localized" at operation. Here the mortality ranges highest of all.

One conclusion which was reached was that in

acute appendicitis in a girl under the age of eight the greatest conservatism should be exercised at operation, inasmuch as seven of the eight deaths in this group were in girls.

## POST-INSTITUTIONAL CARE OF THE INSANE

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ONE of the basic endeavors of the Mental Hygiene movement is the promotion of improvement in the care of the insane. I wish to emphasize that care of the insane should not end with release of the patient from the hospital, but should follow through to his readjustment to society, complete or partial, as the case may turn out to be. Mental hygiene must turn more attention to this problem.

I shall deal briefly with the methods of after-care which we attempt to employ at the Fergus Falls State Hospital. In order to understand the problem we should know the methods by which patients may be admitted, may be released and may be returned to hospitals for the insane in Minnesota.

A person comes to enter such a hospital in most instances by voluntary application or by commitment to the custody of the superintendent of the institution by the probate court of the county in which the insane person resides. Occasionally individuals who have been committed to the custody of the State Board of Control are placed in hospitals by the Board. Rarely patients are received by transfer from other institutions and occasionally from the District Court.

In order to enter a Minnesota hospital for the insane as a voluntary patient, the applicant must be a resident of the state, twenty-one or more years of age, sane enough to realize the nature of the institution and desirous of entering the hospital of his own volition, without coercion. He must sign an application which states: "I, . . . . ., a resident of . . . . . County of . . . . ., believing myself to be afflicted with mental disease and desiring to receive treatment therefor, apply for admission to the . . . . . State Hospital. I agree to submit myself to the custody of the superintendent of said hospital and abide by all rules and regulations in force, and in case I

desire to leave said hospital, will give written notice of my intention so to do to the superintendent thereof."<sup>4</sup>

The procedure by which a patient enters the hospital by commitment is briefly as follows: A verified petition is filed in the Probate Court of the county in which the patient is then residing, praying for an examination of the individual to determine as to his sanity. The individual is then examined by a board consisting of the Judge of Probate and two physicians. His interests are safeguarded by the County Attorney. If he is found to be insane ". . . one of unsound mind other than one who may be properly described as only an inebriate or feeble-minded person. . . ." he is committed to the custody of the superintendent of one of the state hospitals and delivered to him by, or under the direction of, the sheriff of the county from which he was committed. Approximately 88 per cent of admissions are by commitment.

Patients may be released in the following manners: When a voluntary patient requests his release, if his condition warrants it he is discharged from the hospital and no longer has any official connection with it. If the patient is too disordered mentally, the superintendent or one designated by him files a petition in the Probate Court of the county in which the institution is located praying for a hearing as to the individual's sanity. The Probate Court at the hearing either finds the patient sane and discharges him or finds him insane and commits him to the custody of the superintendent. In the latter case he may be released from the hospital only as any patient originally admitted by commitment.

An individual in the hospital under commitment in insanity may be released, upon the approval of the superintendent, to a relative, friend, or other responsible person, under parole

agreement or bond. The essential specifications of both the agreement and the bond are that the principal and sureties in the case of the bond, and the signee in the case of the agreement, are obligated to provide care and safekeeping of the patient while on parole and to pay the expense of his return to the hospital, if such return becomes necessary during his parole period. Occasionally patients are released under straight parole, namely, to themselves. Again, very rarely a patient is released through district court proceedings, in which case he is discharged from the books of the hospital. Almost all patients who are released are paroled under agreement or bond. The parole period usually runs at least one year. It may be renewed or the patient may be discharged from the books of the hospital upon authority of the State Board of Control. Some patients leave the hospital by escape.

While an individual is on parole or escape, he may be returned to the hospital at any time without either further process of law or willingness on his part, if his mental status warrants such return. Once a patient is discharged from the hospital, either by the superintendent in the case of voluntary patients or by the Board of Control following parole or escape, he can re-enter the hospital only under the conditions and methods outlined above for original admissions.

As I have emphasized elsewhere,<sup>3</sup> before intelligent institutional care can be instituted we must know: (1) what the patient was like before he developed his mental disorder; (2) what happened to him physically and psychically; and (3) the patient as he is when he presents himself at the hospital. In directing intelligent post-institutional care, in addition to these things we must know what the patient is like when he leaves the hospital and the nature of the environment which he is to enter. It is essential to realize that in each case we are dealing with an individual of a given native endowment reacting to experiences of life specific for that individual. The importance of environment as part of experience can not be too highly stressed, both in regard to the part it plays in the development of the disorder and in the after-care. Truly one can not separate the individual from his environment.

It seems to me that under the present conditions the essential direction of the post-institutional care of the insane must in a large measure

be supervised by the hospital through its field workers under direction of its resident medical personnel. However, it is essential to have the coöperation of the general practitioners and psychiatrists in private practice if the best results are to be obtained in the treatment of these individuals. Although the supervision rests ultimately with the hospital staff, the psychiatric social worker and the physician in the field are the two most important direct forces in the after-care.

As has been outlined by Crutcher,<sup>2</sup> this part of the psychiatric social worker's duty may be divided into two phases—pre-parole period and the parole period. The psychiatrist directs the treatment of the patient. He makes the diagnosis, gives his impression of the prognosis and interprets the patient's personality before onset of the illness, his progress toward recovery, his condition on release, and his needs to his family and to the social worker. The latter during the patient's stay in the hospital is expected to gain a working understanding of these matters, as well as knowledge of the patient's general home situation and his community. She has established a working contact with the family, the agencies in the community, and other forces such as the local medical advisor. She works with these individuals and groups in building up in as far as is possible an environment which will meet the patient's needs as outlined by the psychiatrist.

In the period immediately preceding parole, the social worker should, if necessary, make further investigation into the home situation before release of the patient. She should investigate the attitude of the family toward the patient and attempt to improve it if faulty, considering each member of the immediate home unit individually and the group as a whole. It may be best for one or more individuals to live elsewhere if the patient is to have a reasonable chance of adjusting upon returning to his former environment. Again "home" may not be the proper place for him upon leaving the hospital. The physical condition of his residence must also be adequate. Opportunities for employment, if such is advisable for the convalescent, should be considered. Is it available at all, and, if so, is it the type suitable for the given patient? Occupational therapy in the form of employment or in other forms is essential to success in after-care. Idleness pro-

vides opportunity for brooding and must be avoided. The social worker should carefully estimate the reaction of the family and community agencies to supervision of the patient. The family should not resent supervision of the released person and should be led, if possible, to understand the attitude of the hospital in the follow-up of its patients. The relatives should be informed of the value of the local agencies and the physician in the field in helping their own relative to re-establish his place in society. After the psychiatrist and social worker have reviewed and discussed these various factors, they must determine as to the advisability of the return of the patient to that given environment. The home may have changed vastly for the better as a rule, but occasionally for the worse, since he left it. If it is not suitable for the individual, other arrangements for his parole must be made. In this event the same type of investigation is made, and what appears to be the most suitable environment obtainable is selected, and the patient paroled.

Whenever possible and practicable, the community agencies when they are contacting the individual's family, should be made aware of the impending return of the patient to his home, as they must include him in their plans for that family. They may be able to provide work for him on a relief project, or, if he cannot work, they provide him with direct relief. The rapport established with the community agencies and physician in the field during the early contact with the patient, and during the pre-parole period, should be maintained. The most important work of the psychiatric social worker in the parole period is the follow-up visits or supervision. Except in unusual instances a "home" visit is made shortly after the patient's release from the hospital. This early parole visit has several objectives. The hospital becomes informed as to the patient's early adjustment and the attitude of the family toward him and the hospital as it actually is after his return from institutional care. More important than this, however, is the fact the patient usually realizes that he has not been forsaken by the hospital, the persons who aided him in his improvement or recovery. Someone who understands him is interested in him and wishes to help him to interpret him to his family and others in the community. The family should be informed that the hospital is always ready and

willing to help them with their problems and to assist the family physician in his dealings with the patient.

As I have indicated, to obtain the best results in the post-institutional care of the insane there must be coöperation between the hospital and the physician in the field. It is not always necessary to be a psychiatrist to aid these persons. However, the general practitioner must assume the proper attitude toward these individuals. As a general rule, when the patient leaves the hospital, he is considered as improved or recovered, not as "insane." It is hard enough for him to bear the attitude of many lay people in his environment that he is someone to be watched either with amusement or fear without being confronted with a similar attitude upon the part of his physician. Start with the attitude that the patient has the same right to your consideration as he would have had had he never been in an institution. Make him feel that he is welcome in your office to the same degree other patients are, neither more so nor less so. C. Macfie Campbell<sup>1</sup> has aptly said, "The general practitioner's attitude toward his patient and mental cases should be the attitude of the medical man to his patient, neither more nor less. The physician who sees in his patient an individual in need of help, whose distress or incapacity he is called upon to relieve by his technical skill or advice, need adopt no special attitude toward him because he happens to be classified as nervous or mental. He will deal with the patient's symptoms as a biological problem requiring a study of the patient's adaptation to his environment." There is unquestionably a need for a better knowledge of clinical psychiatry among physicians whose work is not primarily psychiatry. The meaning of the commoner terms should be understood. A simple workable classification should be acquired and a knowledge of the chief characteristics of each group mastered. With this equipment a physician consulted by a former patient of an institution for the insane can readily inquire of that hospital as to the nature of the individual's disorder and their suggestions as to his treatment. Far too seldom do we receive requests for the information of this type. The physician in the field should be on the lookout for the return of symptoms in order that early treatment may be instituted. Information should be obtained from

the hospital as to the patient's personality and as to his needs.

Two types of individuals bear special watching, the depressed and the paranoid. All cases of depression are potentially suicidal. It is often difficult to convince the family of a moderately depressed individual that he may very likely commit suicide. Every effort must be made in this direction. However, it is not wise to allow the patient to feel that he is being constantly watched and protected from himself, as this in itself heightens the probability of his taking his life. If strict watching becomes necessary, it is best to place the patient in a psychopathic hospital.

The paranoid patient, whose persecutory ideas are directed toward one or a few individuals, relatively accessible to him, should be closely observed. Such paranoid persons are more potentially dangerous than those who feel they are being persecuted by large groups, such as secret societies, political parties, religious sects and the like. Those who harbor grudges against individuals beyond their reach likewise are not as much to be feared. Do not try to argue these patients out of their delusions—it cannot be done. Often ill will toward the physician results, which obviates any probability of his being of further aid to the patient. A nicety of judgment is required in determining the point at which to advise return to the hospital if such becomes necessary. Care in the hands of a psychiatrist in private practice may be feasible in some instances, particularly if the patient has been discharged from the books of the hospital, or the patient strongly prejudiced against the hospital. A patient's return to the institution should not be required for any slight unfavorable change, nor should it be delayed to a point where he is again gravely disordered. The following symptoms, when manifested, make return to the hospital imperative, and delay in so doing hard to justify: homicidal tendencies, suicidal attempts, moderate to marked depression, failure to eat or to take sufficient liquids, marked psychomotor hyperactivity, violence and combativeness, destructiveness, and wandering away from place of residence.

Subsequent visits are made by the social worker or parole agent during the parole period. An attempt is made to visit each patient on parole three or four times a year. This is not always practicable in our cases because of the extent and

nature of the territory covered and because of climatic conditions. Some are visited more frequently than others because of accessibility or of actual need for more assistance. As noted before, as a rule the parole period runs for at least one year. A report is made by the social worker to the medical officers of the institution after each visit, stating whenever possible the patient's own opinion of his progress, what his relatives think of his condition and the worker's interpretation of his mental and physical status. If his progress is satisfactory during and at the end of one year, he is usually recommended by the hospital for discharge from its books. Except in special instances, discharge is then authorized by the Board of Control.

If progress is unfavorable, the hospital may demand the return of the patient in accordance with the terms of the parole agreement or bond, or the parole period may be extended. Likewise the relatives, upon advice of the parole agent, the physician in the field, or upon their own judgment, may return the patient at any time while on parole.

Few detailed studies of the after-histories of patients released from institutions for the insane seem to have been published. Through coöperation with the psychiatric social service department, I am now pursuing an investigation of this type covering a significant number of our cases. The results will be reported in the future.

The following figures represent a rough estimate of the success of patients who were released or who escaped from the Fergus Falls State Hospital during the period from January 1, 1930, to December 31, 1931. Excluded from consideration are patients deported, transferred to other institutions, paroled for short visits and those who were known to have died from any cause within one year after leaving the institution. Allowing for these exclusions, 843 persons were paroled or escaped from our institution during this period. In the calendar year of 1930, of the 425 patients considered, 266, or 62.6 per cent, have since been returned to the institution. Some of these died later, some are still under hospital care, others have been re-paroled. The survey shows that 159, or 37.4 per cent, never returned to the institution. Similarly, of 428 leaving during 1931, the returns number 285, or 66.6 per cent, and those who did not re-enter our



hospital number 143, or 33.4 per cent. For the two year period, of a total of 843 releases (paroles and escapes), 541, or 64.2 per cent, were returned to our hospital, and 302, or 35.8 per cent, did not again enter the Fergus Falls State Hospital.

Because of lack of time for satisfactory investigation, these figures have not been corrected for possible subsequent readmission to other institutions, nor do they indicate degree of adjustment to society.

It is true that our post-institutional care of the insane has improved since the date of release of the group of patients considered above, but it is obvious that there is still room for vast improve-

ment. This improvement must come as a part of mental hygiene directed by the resident personnel of the institutions and carried out by its psychiatric social workers or parole agents and the agencies and physicians in the field.

### Bibliography

1. Campbell, C. Macfie: The general practitioner's approach to his nervous and mental patients. Brit. Med. Jour., 2: 1186-1189, (Dec. 31) 1932.
2. Crutcher, Hester B.: A Guide for Developing Psychiatric Social Work in State Hospitals. Utica, New York, State Hospitals Press, 1933.
3. Gardner, Walter P.: Classification of mental disorders—Approach to diagnosis in the individual case. (To be published in MINNESOTA MEDICINE.)
4. Mason's Minnesota Statutes, 1927 and supplements thereto, Section 8954.
5. Mason's Minnesota Statutes, 1927 and supplements thereto, Section 8953.

## HERNIA: INJECTION OR OPERATION?\*

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TO the doctor in general practice who wants to advise and to treat his hernia patients in the best way possible, a study of the recent literature on hernia speaks something of a Babel of confusing tongues. The kettle, known as the operative treatment, and the pot, known as the injection treatment, have been inclined to call each other black. Until six or seven years ago it seemed that the question of hernia was about settled except for a discussion of details of operative technic. During the last few years, however, the injection treatment, which has been advocated sporadically for more than one hundred years, is again clamoring for recognition and during the last four or five years most of the papers published on the subject have dealt with the injection method. As is usual with controversial subjects the advocates of each method are inclined to stress the advantages of their type of treatment and the disadvantages of the other type. In this case I believe that we have two types of treatment that are definitely useful and effective when properly used. I shall attempt to discuss the subject from the standpoint of a man in general practice who cannot claim to be an authority on either method but who has tried to acquire some experience and familiarity with both.

It must be conceded at the outset that if any one method of treatment produced very nearly 100 per cent of cures and was without mortality or serious complications then that method would deserve very little challenge from any other. Surgery has failed to reach this high plane and the injection method, I believe, is deserving of a sympathetic opportunity to prove itself under the test of time.

It has been variously computed that there are from two and a half to six million people in the United States with hernias, and as more than 90 per cent of these are of the inguinal variety I shall confine this discussion to the treatment of inguinal hernia. Technical procedures, both operative and injection, have been adequately described by those well qualified to do so. I shall attempt to discuss the subject from the general standpoint of consideration for the best interests of the patient, having in mind four factors: (1) mortality; (2) complications; (3) recurrence; and (4) the economic factor of expense.

Before considering either the operative or injection method one might ask himself how many of these three or four million hernias need treatment of any kind other than a well-fitting truss. Certainly one-half or more get no other treatment than a truss, and that often a very poorly

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fitting one. Authorities seem to agree that direct hernias, which comprise 8 or 9 per cent of the total, usually cause very little trouble and would be well controlled with a properly fitting truss. It is this group that is hard to cure and to keep cured by any method. Andrews and Bissell<sup>1</sup> conclude that, since direct hernias seldom cause pain and carry slight risk of strangulation or increase in size, they should usually not be operated on, particularly as the results of surgery are appallingly bad. Many advocates of the injection treatment admit that direct hernias are harder to close and recur more frequently than indirect. I think we must admit that the fitting of trusses is poorly done and that if doctors themselves would give more study and attention to this problem many hernias could be satisfactorily controlled. A great many people will elect no other type of treatment and if they are to wear trusses at all they should wear ones which are properly fitted.

What then of the operative treatment of inguinal hernias, having in mind the four criteria mentioned?

1. *Mortality.*—We know that herniotomy is looked upon as the simplest of all so-called major operations. Every doctor who completes his internship feels qualified to "fix a hernia" as his first operation. Undoubtedly surgical results would be better if all hernias were operated on by skilled surgeons in the finest hospitals but this is a millennium which will probably not be reached. Even the most skilled surgeons will admit that the operation for hernia carries some risk to life, though it may be small compared to some other operations. Mortality in large series of strangulated cases has been reported around 15 per cent, but this cannot be compared with the injection method, which of course would not be suitable for strangulated hernia. Non-strangulated cases have been reported in large series with a mortality of 1 per cent and less, but I believe that in general work it would be somewhat more than 1 per cent.

2. *Complications.*—This includes the various sequelæ of anesthesia and operation, such as bronchitis, pneumonia, phlebitis, embolism, urinary retention and its consequences, infection of wounds and atrophy of the testicle. Foss and Hicken<sup>4</sup> in 778 cases report about 10 per cent of complications. O'Shea,<sup>10</sup> reporting 1,016 cases, found 5.4 per cent of wound infections with a

considerably higher rate when living fascial sutures were used. He reports atrophy of the testicle in only one case.

3. *Recurrence.*—Here the figures vary greatly and often the cases are not separated into direct and indirect so it is hard to make comparisons from various reports. Also the factor of time elapsing since the date of operation is not always considered. I think that a fair figure on cases reported would be 10 per cent recurrence in the indirect type and 25 per cent in the direct. Some excellent men have reported much lower percentages than this and some equally excellent men have reported much higher figures.

It is in these cases that recur, and especially in the direct type, that more attention to details in surgical technic might have prevented recurrence. The conventional Bassini operation with four or five interrupted catgut sutures pulling the conjoined tendon and internal oblique down to Poupart's ligament evidently is not enough in these cases. The use of living fascial sutures taken from the thigh undoubtedly results in a higher percentage of cures but this complicates the operation considerably for the average operator. Coley<sup>14</sup> has said that after careful study of the results in 1,200 fascial suture operations the results were far from expectations and during the last couple of years he has been using them less frequently. Silk sutures which were once tabooed are being used again with reports of fewer recurrences. Seelig,<sup>11</sup> in about 1923, concluded that muscle would not permanently unite to fascia but Koontz,<sup>7</sup> in 1926, showed that it would unite through the fibrous components of the muscle if held in contact long enough. This, it is contended, the buried silk sutures will do when catgut will not. Shambaugh<sup>12</sup> in a recent study of 2,360 cases has found that suppurative infections occurred just twice as often with catgut as with silk and minor wound complications (hematomas and accumulations of serum) eight times as often with catgut as with silk.

I think it is reasonable to believe that if fascial strips taken from another part of the body are useful then we should make more use of the fascia which is present in the inguinal region. A careful fascia to fascia imbrication with catgut or silk or both would probably lessen the number of recurrences. Some difficult cases would require a modified technic such as the Halsted or

Bloodgood, or the fascial flap as lately described by Wangenstein.<sup>13</sup> These are procedures with which doctors who operate for hernia should become more familiar.

4. *Economic Considerations.*—Operation means at least two weeks of hospital expense, a surgical fee, absence from work on even a white collar job for one month, and with heavier types of work for at least two or three months. This means an outlay of from four to seven hundred dollars in the average case. That in itself is no serious argument against surgery if the results are good and if the same result cannot be accomplished in any safer or more economical way.

### Injection Method

What of the injection method, having the same criteria in mind, namely mortality, complications, recurrence, and economic factors? Any procedure which involves repeated deep punctures with a needle through tissues of varying thickness and resistance and injection of irritating fluid near important structures like blood vessels, nerves and peritoneum could hardly be expected to be entirely without danger to life nor entirely free from unpleasant sequelæ. It goes without saying that no one should attempt it on a patient without looking into the matter carefully and observing and learning the technic. There are certain absolute contraindications, the main ones being strangulated and incarcerated hernias, for no hernia which cannot be completely reduced and held that way by a truss is suitable for injection. Other contraindications vary with different authors, as syphilis, diabetes and general constitutional conditions which might preclude treatment of any kind not absolutely essential.

1. *Mortality.*—Series of cases totalling many thousands have been reported without mortality. In the earlier days with more irritating solutions there may have occasionally been a fatal complication of some kind but I have been unable to find any mortality in the series of cases reported during the last few years, except one case<sup>2</sup> in which an excessive dose of thuja solution had resulted in perforation of the ileum with resultant peritonitis and death. Mayer<sup>9</sup> reported 3,000 cases and Pina Maestra 15,000 cases with no mortality. Bratrud,<sup>2</sup> Rice, McKinnon and Larson in our own state and many others from

various parts of the country have reported series of cases totalling many thousands with no deaths. I believe it is fair to say that this method is practically free of mortality.

2. *Complications.*—Mayer<sup>9</sup> and Pina Maestra have reported their large series of cases with no serious complications. Swelling of the cord, hydrocele of the cord, numbness or temporary paralysis in the thigh occasionally occurred. McMillan and Cunningham<sup>8</sup> in 4 per cent of their cases had some transient swelling in the cord and tenderness in the testicle. Reactions occasionally occurred from injection into the peritoneal cavity, severe abdominal pain, some shock and good recovery in every case in less than an hour. They report no atrophy of the testicle which had not existed previous to injection but found that 8 per cent of their cases had some atrophy of the testicle before any injections were given. Tenderness in the cord and an occasional hydrocele of the cord are the main complications reported by most authors. A few cases have been reported of some sloughing due to the fluid being improperly injected into fatty tissues. Even those who have used the method and given it up have not claimed any serious or frequent complications.

3. *Recurrence.*—This, I believe, is the crux of the whole question of the injection method. It has been sufficiently shown that when properly done the mortality is practically nothing and the complications slight. If a hernia is to be cured by the injection method fibroplastic tissue must be produced in the proper places and if the hernia is not to recur that fibroplastic tissue must stay there and not be absorbed. All who have worked on the problem seem to agree that fibroplastic tissue is produced but all do not agree upon its permanency. Kelly,<sup>6</sup> after reporting some experimental work in dogs, indicating that while fibroplastic tissue was formed it later largely absorbed, says, "My clinical experience covers 525 injections in twenty-five different cases, which gives an average of twenty-one injections per case. As yet we are not sure we have cured anyone. I am satisfied that we can produce fibroplastic tissue in such an amount that it would cure a large number of hernias if it would be maintained. But as yet we have not been able to maintain it. I believe that there is a chance of our finding some solution or solutions that will produce and maintain the fibro-

plastic tissue necessary for a cure. I do not believe that such solution or solutions have been found yet." Coley,<sup>3</sup> at the Hospital for Ruptured and Crippled in New York, after using the injection treatment on sixty-six patients with ninety-two hernias, agrees with Kelly and has stopped using it for the present at least.

On the other hand the large majority of the reports that are published, including Bratrud,<sup>2</sup> Rice, McKinnon, and Larson in our own State, and many others in various parts of this and other countries, indicate a high percentage of cures and a recurrence rate of not more than 10 per cent and in many series much less than this. The point is made by advocates of the injection treatment that the patients should be reexamined from time to time for several years so that if at any time there is evidence of recurrence a few more injections can be given, a procedure much simpler than operation for recurrence. Undoubtedly failures occur with the injection method due to insufficient treatment or to failure of the patient to strictly follow directions as to wearing a properly fitting truss at all times during the progress of the treatment. But the large number of favorable reports have been made by men of large experience in this work who made every effort to have every point in the technic properly carried out and so many thousands of cases have now been reported by so many workers that we are inclined to believe that this method is here to stay unless the march of time proves that the fibroplastic tissue cannot be maintained.

It has been conceded by nearly every one, and my own limited experience bears it out, that after four or five injections the patient is able to wear the truss much easier, the hernia is retained, the patient is more comfortable and I believe that if this alone is accomplished it is well worth while in a large number of older people who may not be doing heavy work anyway, and who may be willing to wear a truss rather than to submit to anything more radical. I do not believe enough time has elapsed since the bulk of the work in this country has been done for anyone to be too sure how permanent the results may be, but there is every reason to believe at this time that a great many hernias will be cured by it.

4. *Economic Considerations.*—The injections can be given in the doctor's office with very lit-

tle loss of time to the patient. As he has no hospital expense, and can continue with his work there is a great saving in the cost. An excellent truss should not cost more than five or six dollars. Two or three dollars' worth of injecting fluid constitutes most of the doctor's extra-expense in the case, and the fee may well be no more and probably something less than the usual surgical fee would be.

## Conclusions

1. Many hernias, particularly of the direct type, require nothing more than a properly fitting truss.

2. The treatment of strangulated and incarcerated hernias is strictly surgical.

3. More careful operative technic, with the use of buried silk sutures, or living fascial strips in the more difficult cases, and a more careful fascia-to-fascia imbrication, would result in a higher percentage of permanent cures.

4. For 80 per cent or more of inguinal hernias, the injection method should be suitable for trial, for there is reason to believe it will cure a large percentage, and alleviate a lot more. The injection method eliminates surgical complications and is a great deal less expensive for the patient.

5. Time alone will tell whether or not the injection method will be as useful as it now appears to be.

## Bibliography

1. Andrews, E. and Bissel, A. D.: Direct hernia: a record of surgical failures. *Surg., Gynec. and Obst.*, 58:753-761, (April) 1934.
2. Bratrud, A. F.: The ambulant treatment of hernia. *Indust. Med.*, 4:469-474, (Sept.) 1935.
3. Coley, B. A.: The old and the new in the treatment of hernia. *Indust. Med.*, 5:623-625, (Dec.) 1936.
4. Foss, H. L. and Hicken, N. F.: Inguinal and femoral hernia. *Am. Jour. Surg.*, 17:349-354, (Sept.) 1932.
5. Frost, J. G.: Reducible inguinal hernia—the injection form of treatment. *Indust. Med.*, 5:617-622, (Dec.) 1936.
6. Kelly, F. A., Pratt, L., and Palmer, A.: Injection treatment of hernia. *Indust. Med.*, 5:622-623, (Dec.) 1936.
7. Koontz, A. R.: Muscle and fascia suture with relation to hernia repair. *Surg., Gynec. and Obst.*, 42:222-227, 1926.
8. McMillan, W. M., and Cunningham, D. R.: Injection treatment of reducible hernia. *Jour. Am. Med. Assn.*, 106: 1791-1795, (May 23) 1936.
9. Mayer, Ignatz: The corrective treatment of hernia. *Med. Jour. and Rec.*, 135:275-278, (March 16) 1932.
10. O'Shea, M. C.: Statistical report on 1,016 hernia: on second surgical division at St. Vincent's hospital, from 1924 to 1933. *New York State Jour. Med.*, 35:473-479, (May 1) 1935.
11. Seelig, M. G., and Chouke, K.: A fundamental factor in the recurrences of inguinal hernia. *Arch. Surg.*, 7:553-572, 1933.
12. Shambaugh, Philip: Postoperative wound complications. *Surg., Gynec. and Obst.*, 64:765-771, (April) 1937.
13. Wangenstein, Owen H.: *Trans. Western Surgical Association*, 43:317-353, 1933.
14. Woolsey, R. A.: Inguinal Hernia. *Ann. Surg.*, 103:812-820, (May) 1936. Discussion by B. A. Coley.



## TREATMENT OF BLADDER TUMORS\*

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THE hopeless feeling of the past toward the treatment of tumors of the bladder has given way to a well founded optimism for the future. This new enthusiasm is based upon the reports of treated cases showing a steady improvement in results. Most impressive are the reported cures of cases with tumors of the more malignant type. Equally encouraging are the results not infrequently obtainable in advanced cases with extensive tumors. Many of these cases were formerly considered utterly hopeless and doomed to morphinism for the relief of pain. Control of the growth is now possible of accomplishment, with the prospect of a few more years of life in comfort. Such results are obtained because of a better understanding of the pathology of bladder tumors leading to the development of more effective methods of treatment. Far better results can and should be obtained. It is the purpose of this paper to arouse the members of the medical profession and through them the public to the possibilities of this disease, to the end that cases may be seen soon after the appearance of the first symptoms, when the tumor is often amenable to successful eradication.

Further improvement in results in the treatment of the malignant tumors will be achieved when diagnosis is more often made while the condition is in an early stage. Unfortunately, there is no typical clinical picture of the disease. First suspicion of the presence of tumor may be aroused by the appearance of hematuria or of some degree of bladder irritation. Hematuria, a striking manifestation, is generally recognized as a possible indication of neoplastic disease. Its occurrence is frequently sufficient to alarm both patient and physician, cystoscopy is performed, and the growth is discovered. Much less appreciated is the possibility that bladder tumor may be the underlying cause of persistent bladder irritation. If patients with this condition are to have treatment during early stages, the importance of prompt cystoscopy should be repeatedly

emphasized, not only for hematuria, but also in cases of unexplained cystitis or pyuria not responding to treatment.

The majority of bladder tumors are epithelial and originate from the mucous membrane of the

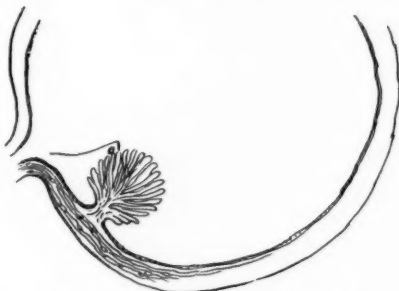


Fig. 1. Benign papilloma (schematic).

bladder. Statistical studies indicate that these tumors make up more than 90 per cent of all bladder neoplasms. Other forms, originating from connective tissue or muscle tissue, are extremely rare and are not under consideration in this paper. Epithelial tumors, from the clinical standpoint, may be classified as either superficial or infiltrating.

### CLASSIFICATION OF EPITHELIAL TUMORS OF THE BLADDER

- I. Superficial tumors.
  1. Benign papilloma.
  2. Multiple papillomatosis.
  3. Malignant papilloma.
- II. Infiltrating tumors.
  1. Papillary carcinoma.
  2. Infiltrating carcinoma.

### Superficial Tumors

The most common superficial tumor is the benign papilloma. It appears as a villous growth attached to the bladder wall by a pedicle (Fig. 1). Microscopically there is a connective stalk covered by several layers of epithelial cells. The cystoscopic picture is unmistakable, and the tumor is readily destroyed by cystoscopic electrofulguration (Fig. 2). When the tumor is large

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it may be removed at one sitting by use of a wire snare or the prostatic resectoscope. Transurethral methods occasionally fail when the tumor is anterior and immediately adjacent to the vesical neck and electrofulguration through a

low grade malignancy involving the papillary portions of the tumor with no infiltration of the base. It is destroyed by electrofulguration. Following destruction of the growth there may be a persisting ulcer of the bladder and the possi-



Fig. 2. Cystoscopic electrofulguration of papilloma of bladder.



Fig. 3. Extensive papillomatosis of the bladder (from Watson). Condition caused retention of urine, leading to infection and death from uremia.

suprapubic opening is required. Irrespective of the method of treatment employed, recurrence is not unusual and follow-up cystoscopic examinations should be advised in all cases. Occasionally the tumors are sufficiently numerous so as to entirely cover the bladder mucosa, the condition of multiple papillomatosis or fur-lined bladder (Fig. 3). This type of superficial tumor is clinically important because of the great difficulty in treatment. Electrofulguration may be tried and also radium and deep x-ray therapy, but these methods are often either completely ineffective or are followed by recurrence. Eventually there is infection of the bladder and kidney, leading to marked inflammatory changes and, ultimately, kidney insufficiency. Such a termination may be avoided by complete removal of the bladder and this should be performed without delay in cases that do not respond to the less radical measures. A rather rare form of superficial tumor is the malignant papilloma (Fig. 4). At cystoscopy it differs very little from the benign growth. On microscopic examination there is evidence of



Fig. 4. Malignant papilloma (schematic). Malignant degeneration of a portion of papillæ. Remainder of tumor benign. Bladder wall normal.

bility of malignant infiltration of the bladder is at once suggested. Biopsy of the tissue removed from the edge of the ulcer will settle the question of malignancy. Even in the absence of infiltration, it is advisable in all cases with this type of tumor to supplement electrofulguration with implantation of radon seeds into the coagulated pedicle.

### Infiltrating Tumors

The infiltrating tumors are divided into two groups according to their gross pathology. First, the tumors in which there is both papillary projection and infiltration. In the second group, the growths are characterized by infiltration, and there is little or no projection of tumor tissue. Histologically, these tumors are similar. Early cases of papillary carcinoma show infiltration of the papillary fronds which extend to the base and the bladder wall (Fig. 5). Growth of the tumor is by extension along the bladder wall, with involvement of the submucosa and muscularis. Infection of the papillary masses is inevitable, and there is interference with the blood supply. Large sloughs occur and are gradually passed away during voiding. The result is wide ulceration of the bladder surface. In some cases the ulcer is covered by incrustations of urinary salts. At this stage there is little or no papillary tissue, and the tumor is termed infiltrating carcinoma (Fig. 6). More typically belonging to the group of infiltrating carcinomata are tumors with

no intravesical projection at any time. Such growths are invasive from the first and eventually lead to great thickening of the bladder wall. Ulceration of the mucosa may be slight and occur only after the tumor has involved a consider-

able portion of the underlying submucosa and muscularis. In far advanced cases, there is marked thickening and fixation of a considerable portion of the bladder wall and extension of the growth to the extravesical tissue. Infiltration of one or both ureteral orifices may occur, leading to hydronephrosis, and, ultimately, kidney insufficiency.

While all infiltrating tumors eventually undergo metastasis, the occurrence is rather late in the tumors belonging to the papillary carcinoma group. In tumors that are invasive from the first, there may be comparatively early dissemination of the growth throughout the body. From a study of the clinical course, it becomes apparent that many of the cases reach a fatal outcome before metastasis has occurred. Infection is frequently the factor responsible, and, once established, may lead to extravesical as well as to intravesical inflammation, pyelonephritis, pyonephrosis, and even sepsis and death. In a series of ninety-eight cases coming to postmortem, studied by Colston and Leadbetter, these men found obstruction, infection, and uremia almost invariably a major factor in the cause of death.

The diagnosis of infiltrating tumors is made by cystoscopic examination. Infiltrating tumors with papillary projection are readily recognized. More difficult of recognition are the non-papillary growths. The presence of these tumors may be suggested when cystoscopy shows ulceration of the mucosa accompanied by irregularity of the bladder surface. The difficulties of the examin-

er are increased in the cases in which cystitis is a complication. In this event, the ulcerated area may be hidden from view by adherent urinary incrustations, sloughing tissue, or by inflammatory exudate or blood clots. Again, the diagnosis

may be difficult in cases of creeping carcinoma of the bladder in which ulceration of the mucosa is late. Diagnosis in these cases will often require a biopsy of tissue removed from the suspicious area. A cystogram may be helpful in estimating the extent of bladder wall involvement.

The surgical treatment of infiltrating tumors of the bladder will depend upon the location of the tumor and the extent of invasion of the bladder wall. Another factor is the presence or absence of metastasis. When there is no evidence of metastasis, resection of the tumor-bearing portion of the bladder wall is carried out (Fig. 7). This is the procedure of choice when the tumor is single and situated in a mobile portion and when invasion of the bladder wall is limited. Beer is enthusiastic over this method and reports thirty-three cases so treated and ten cases cured for five years, or 33 per cent. The method is not applicable when x-ray of bones and lungs shows evidence of metastasis; neither will it apply in those cases with involvement of the trigone or vesical neck by the tumor or when the regions of both ureters are infiltrated. It is probable that better results may be obtained in such cases by combining radium or radium emanations with x-ray and electrofulguration (Fig. 8). In this method the protruding tumor mass is electrofulgurated suprapubically and radon seeds are implanted directly into the tumor base. A full course of deep x-ray treatment by the Coutard

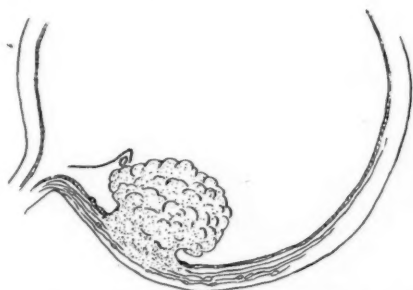


Fig. 5. Papillary carcinoma (schematic). Semi-solid papillary mass. Areas of necrosis and edema of adjacent bladder mucosa. Infiltration of bladder wall.



Fig. 6. Infiltrating carcinoma (schematic). Large crater or ulcer. Intravesical projection of necrotic papillary tissue. Extensive infiltration of bladder wall.

method follows. In a small series of cases so treated by the author, the condition seemed to be controlled. In all there was symptomatic relief, the postoperative period was not prolonged, and there was no operative mortality.



Fig. 7. Segmental resection of papillary carcinoma (from Young).

One patient with a creeping type of infiltrating carcinoma of the bladder is at his work every day, two and a half years since operation. Nevertheless, published reports of five years' studies of cases treated by this method indicate poor end-results.

In a large number of cases of infiltrating tumors, attempted eradication of the disease by complete removal of the bladder offers the only hope of cure. This procedure is indicated in carefully selected cases when the growth is unfavorably situated for removal by segmental resection. Its employment is advisable in cases with tumors located in areas adjacent to the vesical neck with invasion of this structure; in tumors of both trigone and bladder base which involve the ureteral orifices; in cases of multiple papillomatosis in which the entire bladder surface is covered; and in cases unsatisfactorily treated by less radical methods.

Before the bladder is removed, diversion of urine is provided for by implantation of the ureters into the sigmoid colon, or by bringing the lower ends out to the skin of the abdomen. Since implantation of ureters into the bowel furnishes a reservoir for urine, this method is preferred to skin implantation. When performed on patients of advanced years, the procedure is attended by a fairly high mortality. Patients should be submitted to this operation only when considered

good surgical risks and when there is evidence of good condition of the upper urinary tract. The question of metastasis may be settled in doubtful cases by a preliminary examination of the lymphatics and the liver through the opened

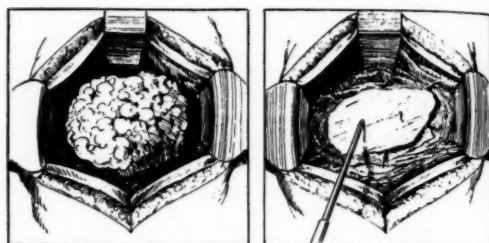


Fig. 8 (left). Papillary carcinoma viewed through suprapubic incision. (Right) Implantation of radon seeds following removal of papillary mass by electrosurgical knife.

abdomen. When dissemination of the disease has occurred, the anastomosis is not done.

Poorer surgical risks may be submitted to ureterostomy or skin implantation, a procedure with a reported mortality of less than 10 per cent. This operation should be performed in cases with dilatation of the ureters. It may be considered as a means of relief when bladder carcinoma is accompanied by marked infection and unbearable pain. Following skin implantation of the ureters, rubber catheters are passed to the pelvis and maintained in position for collection of urine. Obviously the results with this method are inferior to those where ureterosigmoidostomy is successful. Progressive dilatation of the ureters and pyelonephritis seem inevitable consequences of ureterostomy, with sepsis and uremia lurking in the background. Disposition of the ureters by either of these methods is then followed by removal of the bladder.

### Summary and Conclusions

The following propositions developed in this paper are repeated for emphasis. Good results in the treatment of bladder tumors, more than anything else, depend upon seeing patients early in the course of the disease. Hematuria and persistent bladder irritation call for immediate cystoscopic examination. The destruction or removal of superficial tumors by appropriate methods is rarely difficult, and is followed by good results. The tendency toward recurrence of these tumors should be kept in mind, and cystoscopic examinations performed periodically



on these patients. Cases of multiple papillomatosis are often resistant to the treatment ordinarily effective in tumors of the superficial type. Complete removal of the bladder should be considered in such cases. Poor results in the treatment of infiltrating tumors are unavoidable when the growth is extensive. There is no excuse when poor results follow the use of improper methods, such as the attempt at destruction of any infiltrating growth by electrofulguration alone, whether applied transurethrally or suprapubically. Treatment of infiltrating tumors depends upon the location of the growth and the

invasion of the bladder wall. Segmental resection is advisable for tumors that are localized. Complete cystectomy is indicated in selected cases, when there is extensive invasion of the base or vesical neck. The ureters are disposed of by implantation into skin or bowel according to conditions in the individual case. Radical surgery is often contraindicated. The purpose of treatment then is to alleviate suffering and to prolong life. Such results may be obtained by combining suprapubic diathermy and radium implantation with postoperative deep x-ray treatment.

### ACUTE CONDITIONS IN THE ABDOMEN\*

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**M**EDICALLY, "acute" means of sudden onset, coming to a crisis quickly. It is important to discover and properly diagnose intra-abdominal disease *early*, to do what should be done promptly, and to avoid doing the wrong thing, which would jeopardize the patient.

Acute intra-abdominal disease may be spontaneous, or may follow trauma; it may be a condition requiring medical care, or one calling for surgical intervention.

Confronted with an apparently acute abdominal condition, it is of the first importance to make a careful and thorough attempt at diagnosis. It might be spectacular to make a hunch diagnosis, but it is safer and serves the patient better to be methodical and thorough, before proceeding to treatment. The surgeon must review the case carefully and never take another's diagnosis as final, though the observation and conscientious opinion of the first attending physician is of extreme value. Clinical observation and laboratory aids should be balanced carefully. Early diagnosis is important.

Narcotics must be used only when they do not obscure symptoms. As a rule, severe abdominal pains lasting several hours, in a patient who has been previously well, are due to surgically important conditions.

A thorough routine examination must be made. Anatomical knowledge must be applied carefully

to estimate local inflammatory conditions, as well as referred pain; for the same reason, physiologic knowledge aids in clarifying obstructive lesions.

While early operation is usually indicated in acute surgical conditions, one must exclude medical diseases which simulate them. Surgical technique must be secondary to good medical judgment. Here lies the difference between the mere operator, and the real surgeon.

The methods of diagnosis include a careful history, as well as a painstaking physical examination. The value of the history is attested by the fact that quite frequently a correct diagnosis can be made by it alone; it always is a big factor in interpreting physical findings.

*Sex* at once classifies certain diseases peculiar to each, either in a positive or a negative way.

*Age* directs attention to certain conditions most frequently found in certain years. For instance, in infants and up to two years of age, acute intussusception is found, whereas acute appendicitis is most common in the young adult. Carcinoma of the large bowel, causing obstruction or perforation, is a disease of advanced adult and old age. Acute perforation of a peptic ulcer, as well as cholecystitis, is rare in childhood. Ectopic gestation occurs in women during the child-bearing period.

*Exact time of onset*, in relation to meals, or to the taking of a laxative, to the emptying of the urinary bladder, or to unusual extreme exertion,

\*From the Mankato Clinic, Mankato, Minnesota. Read before the annual meeting of the Minnesota State Medical Association, St. Paul, Minnesota, May 4, 1937.

or the awakening from sleep, may fix the organ of involvement, as well as define a fair time for the development of certain symptoms.

*Acuteness of onset* should be considered. Sudden pain with collapse or fainting in a woman, makes one think of a ruptured ectopic gestation; while in a man, acute pancreatitis or a perforating peptic ulcer may be the cause. Intestinal strangulation, or torsion of an ovarian cyst or an intra-abdominal testicle, usually have a sudden onset, whereas intestinal obstruction is slower in developing. Elapsed time since onset determines prognosis, as well as the urgency for operative interference, compared to conservative observation.

*Pain.* The character of pain, its location at onset, and later distribution, will point to its source frequently; the influence of respiration, as well as micturition, on pain, may point the way.

*Vomiting* in acute abdominal lesions is due to peritoneal or mesenteric irritation, or to obstruction to a hollow muscular tube, or to the effect of absorbed toxins upon the medulla. The time of vomiting in relation to the onset of pain may give a clue to the location of the trouble; in intestinal obstruction, especially, one can judge the level of the obstruction by the time of vomiting. The character of the vomitus will often show its source, whether in stomach, upper intestines or large bowel.

*Bowels.* Any marked change from previous normal bowel action is significant. Blood or mucus in the stools usually accompanies intussusception.

*Menstruation.* A careful inquiry into the character and time of menses is especially important in checking the possibility of ectopic gestation, or ruptured ovarian follicle, or twisted ovarian cyst.

*Past history.* This should be reviewed, for history of so-called indigestion, relation of pain to food, history of colic, jaundice, hematuria, glycosuria, melena, angina pectoris, and weight loss.

*Physical examination.* Facial appearance, suggesting pain, shock, loss of blood, and jaundice, should be noted. Attitude and posture may give certain diagnostic leads. Pulse, temperature and rate of respiration are important signs. The condition of the tongue is an open book to the experienced clinician.

*Abdominal examination.* Have the patient point out, if possible, the exact spot of the pain at its onset and also the subsequent radiation, and note swelling, tympany, fluid or coil distension. All potential hernial orifices should be inspected. Note the respiratory movement of abdominal wall, or its limitation, generalized, or in part. Abdominal palpation must be gentle, and must be performed with warm fingers. Muscular rigidity is often relative, and corresponding areas should be compared. As long as the parietal peritoneum is not irritated by inflammatory response, the rigidity may be slight.

*Hyperesthesia* is tested by light pricking with a pin, and corresponds to the related nerve segments. Tenderness is usually more marked on sudden release of pressure. Careful palpation and percussion of the lumbar regions will clarify renal conditions. Iliopsoas rigidity or thigh flexion shows irritation or pressure along corresponding areas.

*Liver dullness* shows possible enlargement due to abscess, or rupture with bleeding. Absence of dullness, with tympany, may mean free air due to a ruptured hollow viscus. Percussion of the liver during deep respiratory movement may show fixation of the diaphragm or pleuritic involvement.

The presence of *free fluid* may be determined by percussion, tapotement and by change of position.

*Pelvic examination* includes bimanual palpation in the female, for tumor, cyst, fluid accumulation or tenderness, including that elicited on moving the cervix to either side.

*Rectal palpation* may locate an abscess, local peritonitis, intussusception or rectal stricture. In the male the condition of the prostate, seminal vesicles and urinary bladder is determined. Aspiration of the cul-de-sac of Douglas may show blood or pus.

*Chest examination* should be made to determine pulmonary and cardiac conditions.

*The spine* may show localized tenderness or rigidity, with local spinal disease causing abdominal pain.

*Pupillary and knee-jerk reflexes* should be checked for possible tabetic visceral crisis.

*Urinary examination* for blood, pus, or crystals is made. Catheterization may diagnose a ruptured or distended urinary bladder.

Determination of the *blood pressure* will show shock, hemorrhage or circulatory failure.

*X-ray examination* of the abdomen and chest is a very helpful medium in diagnosing acute abdominal disease. Especially useful is x-ray examination of the abdomen in different postures, to show gas and fluid levels in intestinal obstruction, intussusception, or a localized distention of the colon.

To take up the various diseases which might cause acute abdominal lesions in detail could be done better in fifteen hours than in the fifteen minutes to which this paper is limited. Therefore, in the remaining time, I shall briefly refer to several rather obscure acute abdominal conditions which one may encounter without enumerating very many other diseases which come up for differential diagnosis.

### Acute Pancreatitis

Acute pancreatitis occurs in less than 1 per cent of acute abdominal disease, and therefore is quite rare and may easily be overlooked, but, even when thought of, is sometimes difficult to recognize.

One should first of all recall the anatomical relations of the pancreas. It lies retroperitoneally, near the celiac plexus and semilunar ganglia. Its head lies in the curve of the duodenum—its body in front of the first lumbar vertebra, and its tail reaches the left lumbar region and touches the spleen.

Acute pancreatitis is probably due to infection, which leads to a spreading hemorrhage into the gland, disorganizing it, and freeing its ferments which attack and destroy the gland, eventually leading to gangrene.

Acute pancreatitis is a disease of middle life, usually occurring in those inclined to obesity. Gallstones may be associated, but not always so, and the diversion of bile into the pancreas by a block at the ampulla of Vater is only occasionally found.

Symptoms are due to various causes, such as inflammatory pressure, swelling of the gland, extravasation of blood and disturbed function. Pain is usually sudden and severe, and may cause fainting. The location of the pain is epigastric, radiating to one or both loins, and at times to the left scapula via the phrenic nerve. The pain will extend to the whole abdomen and become somewhat less severe at a later stage.

Shock is marked, accompanied by a weak, rapid pulse, subnormal temperature, cold and sweating skin. Vomiting is persistent, or unproductive retching may be severe; the vomiting is reflex, and very seldom becomes feculent. Epigastric tenderness is always present. Epigastric rigidity may be board-like at the onset, but usually the abdominal wall itself is soft, differing in this way from the extreme stiffness one usually finds in acute perforation of a peptic ulcer.

Tumor in the epigastrium may be found, due to the swelling of the pancreas. Jaundice is a frequent symptom and is probably due to compression of the common duct by the swollen pancreatic head. Rarely will the large head cause obstructive vomiting by pressure on the duodenum, and usually emesis is reflex.

A rather rare but pathognomonic finding is discoloration in one or both loins, and is due to extravasation of blood from the disintegrating gland into the retroperitoneal areolar layers. It occurs, when present, only after two or three days.

Glycosuria is an occasional finding but is not constant. Diastase in the urine is increased and is due to the liberation of pancreatic ferments. Its increase in the urine may be ten-fold.

Cyanosis of the face and the extremities is frequently noted, and is accompanied by dyspnea, due to the limitation of diaphragmatic movement, caused by the nearby inflammation. Since in the later stages of acute pancreatitis, the symptoms and signs diffuse into a more general abdominal picture, with lessened pain, distention and accumulating fluid, it is important to check the condition at onset, and then its subsequent development.

Differential diagnosis. In acute pancreatitis the rigidity may be marked, but is definitely limited to the epigastrium and not so widespread as in a perforated ulcer. A perforating ulcer produces pain referred to the top of the shoulder, which is rare in pancreatitis, and, when present, is limited to the left shoulder.

Cyanosis, jaundice and bilateral lumbar pain are characteristic of pancreatitis; absent liver dullness in the axillary line points to hollow viscus perforation, with escape of gas. Glycosuria and increased urinary diastase go with pancreatitis. Acute appendicitis differs in the history of its onset and development. Pain and vomiting are less severe in appendicitis, and the

localization of the pain, and rigidity in the right lower quadrant, are characteristic.

In acute cholecystitis and biliary colic the tenderness is located in the right hypochondriac region. There is usually a history of previous attacks, and hyperesthesia is along the superficial distribution of the eighth or ninth thoracic nerves on the right. One must keep in mind, however, the simultaneous existence of gallbladder and pancreatic inflammation.

Finally, when the signs involve the entire abdomen, differentiation may be impossible. The indication for exploratory operation, however, remains.

### Acute Intestinal Obstruction Due to Bands or Adhesions

Acute intestinal obstruction may be due to many causes, such as hernia, intussusception, volvulus, impacted large gallstone, fibrous or tuberculous stricture, Meckel's diverticulum, and obstruction by bands and adhesions. We will consider briefly only the latter at this time.

Bands or adhesions may be congenital, or develop as the result of a previous or concurrent peritonitis.

Congenital bands which cause obstruction are rare, but may be associated with a maldeveloped mesentery which leaves openings of various degrees into which the gut may wander and become strangulated.

Peritonitis causing obstructive bands may follow an inflamed Meckel's diverticulum, appendicitis, adnexal infection, or torsion of ovarian cyst or tumor with gangrene.

The obstruction due to these latter causes is apt to come on in a subtle way, and considerable damage may ensue before the cause is recognized and the resulting obstruction relieved, while the various hernial strangulations, volvulus and intussusception are more definite in their location and findings. The symptoms usually begin with an ill-defined colic and nausea. Pain may not be severe and the local signs indefinite. The onset is rather slower than in hernial obstruction or volvulus. Soon vomiting occurs, at first of bile and upper intestinal contents, and later fecal in character. The time of onset of vomiting depends somewhat on the level of obstruction. If low down, it is later in relation to the ingestion of food than when high up in the canal. Like-

wise, the resulting constipation, in a reverse manner, comes on earlier, the lower the obstruction. Gas and even feces may be expelled for a period in a high obstruction.

The previous history of the patient gives the best clue to the diagnosis of this type of obstruction. A history of a ruptured appendix, with or without operation, or infectious pelvic disease, should make one expect a possible band or kink.

A quite reliable aid to early diagnosis is the taking of an x-ray film in the upright and lateral positions. The finding of ladder-like markings, showing gas and fluid levels in the small intestine, which change with the position of the patient, is a pathognomonic sign. The location of the obstruction can sometimes be made out in this way so that surgical attack can be made, with a minimum of intra-abdominal manipulation.

Surgical relief will be accomplished by cutting obstructing bands, releasing kinks, enterostomy or resection, depending on the condition found.

### Mesenteric Thrombosis

This acute condition, which resembles acute intestinal obstruction in many ways, is usually difficult to diagnose, and must therefore be kept in mind. It is caused by arterial embolism from a cardiac lesion, or from venous thrombosis from a pelvic, intestinal, or appendiceal infection, and the presence of any of these conditions should direct attention to the possibility of its presence.

The onset is rather sudden, with intense pain in the umbilical region, radiating to the epigastrium, hypogastrium, or to the lumbar regions. Vomiting, which may be blood-streaked in character, then diarrhea, which also may become bloody, are characteristic of the condition. Shock with subnormal temperature and circulatory depression follows, with early death. There may follow obstruction of the intestinal canal with distention, fecal vomiting and hiccough.

Acute intestinal obstruction following a bloody diarrhea is due usually to intussusception or mesenteric thrombosis.

Early operation is indicated for the exclusion of the gangrenous loops, and anastomosis after enterectomy. If the patient is in poor condition, resection with enterostomy may be the extent of safe surgery. In extensive involvement of intestines, operation may be useless.



## THE COLLECTION AGENCY RACKET

Stanley B. Houck\*  
Minneapolis, Minnesota

THROUGH their committees on unauthorized practice of the law, bar associations are discovering that business and professional men, including doctors, are being exploited and victimized by certain types of collection agencies and "collection systems." The clients of numerous lawyers are reporting similar conditions.

The ease with which business and professional men are "sold" collection systems and the services of collection agencies would be astounding were it not so generally known that collections are the bane of most creditors' business and professional existence.

A high pressure salesman calls upon a busy man; makes extravagant promises and representations; obtains a contract and double-clinches the arrangement by taking away with him the creditor's uncollected accounts and all information necessary for their proof in case of dispute. There seldom is any similarity between the salesman's talk and the contract.

Some of these agencies may be called, for want of a better name, the "hit and run" agency. They send an extremely capable salesman into another state; who gets his prospect's signature and accounts and returns to the state of his origin before his victim realizes what has happened. From that point on, no representative of the agency enters the state wherein the debtor and the creditor reside and all business is transacted by mail.

Usually, the contract has a variety of provisions designed to protect the agency, exclusively, and to give the creditor no right to an accounting until all of the accounts turned over have been collected. The agency, also, protects itself by retaining its full commission on claims withdrawn and on claims collected by the creditor. As a practical proposition the contract is so drawn that the creditor, oftentimes, can never get anything from the agency on the claims turned over to it.

The agency generally recognizes no claims or demands of the creditor upon it. The creditor can get neither the money collected nor the return of his accounts and the data supporting them. His only relief is to go to a foreign state and institute an action; and this, obviously, is oftentimes impracticable, if not entirely impossible.

All this can be easily prevented by the observance of simple rules:

(1) Never employ, for the collection of accounts, any collection agency which does not have a place of business and a resident agent in your state and, preferably, in your vicinity. As a practical matter, effective collection of debts requires the services of a personal collector, which means that the agency must have some local place of business.

(2) Never sign a contract covering collections unless you have studied it as carefully as you would the most important contract you may ever enter into; and unless certain that what the salesman said and what the contract says are the same. It is also very desirable that such contracts be passed upon by an attorney. It is entirely unnecessary that a collection contract be long or elaborate. If it is, treat it as a suspicious document.

(3) Any agency which undertakes to effect collections entirely through the mails from an out-of-the-state place of business will either be ineffective or its effectiveness will depend entirely upon its illegal acts; usually acts constituting the unauthorized practice of the law and the use of documents simulating legal notices and process. Such acts may involve the creditor in serious liability.

(4) Ask the State Bar Association what it thinks of the agency and its contract.

Equal caution should be used to avoid purchasing "collection systems."

The backbone of such systems usually is a series of acts which constitutes unauthorized practice of the law. These acts include letters threatening to turn claims over to an attorney; threats to sue, garnish, attach, supplementary proceedings, etc. They also often contain lurid forms of notices and other documents which give the impression that a legal action has been, or is about to be, instituted; and that dire consequences are about to befall the harassed debtor.

The "hit and run" collection agency which comes into the state and permanently vanishes therefrom thereby avoids, as a practical matter, any obligation to comply with the law or live up to its agreement. If the agency were one which had representatives within the state upon whom process could be served, the creditor would be amply protected. As it is, the accounts have been taken without the state; the money paid by the debtor is remitted by him by mail to a point without the state and the agency cannot be compelled to account for funds collected or to return the records of the indebtedness unless the creditor goes to the other state and institutes suit there.

A creditor who uses a "collection system" built around threats to sue and the use of documents simulating legal notices or process subjects himself to possible fine and possible imprisonment for contempt of court.

In addition to the legal situation arising out of such contracts and systems, there is the broad question of public interest and public policy. No reasonably disposed creditor would, in many of the situations referred to, allow agencies of the sort described to handle his collections if he knew the methods such agencies pursue. The money the creditor receives is not worth the suffering and harassment of the debtor upon whom the illegal methods described are used.

\* Chairman of the Standing Committee on Unauthorized Practice of the Law of the American Bar Association.

## EDITORIAL

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BUSINESS MANAGER  
J. R. BRUCE

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### Canker Sores

ONE of the sad features about the practice of medicine is that we physicians know so little about and often can do so little for some of the commonest troubles of our patients. These troubles, such as headache, flatulence, backache, and the common cold, may not be serious and they may not cause death, but they can be very annoying and disabling, and the victims would be slow to subscribe to the view that they are of no great consequence.

Among these "minor" disturbances for which a cause has never been found and for which there has been no treatment might be listed canker sores in the mouth. As Rowe pointed out in his recently published book on "Clinical Allergy," a number of writers during the past twenty years have suggested that these sores might be due to

the eating of some food or the taking of some drug, but no one paid much attention to these statements.

This is unfortunate because there can no longer be any doubt about the fact that in many cases these painful sores are due to the eating of foods such as chocolate, eggs, milk, wheat, prunes, apples, bananas, cantaloupe, and grapes, or the taking of drugs such as phenolphthalein, or to the use of certain dentifrices, or to the presence in the mouth of certain metals in fillings or artificial dentures.

In rare cases an allergic disturbance in the mouth can even give a picture resembling that spoken of during the war as "trench mouth." I have recently reported a case in which a life-long misery due to canker sores was stopped the day that chocolate was removed from the diet.

It is certain, then, that canker sores can be due to the eating of some food to which the victim is sensitive. It may well be, of course, that there are other causes, but certainly, now, when a patient comes with this trouble, he should be instructed to keep a careful record of unusual foods eaten for twenty-four hours preceding the appearance of each crop of sores, and he should be asked to stop the use of laxatives and all other drugs during the period of investigation. After he has had four or five attacks he may find that some one unusual food, not used every day, was eaten just before each outbreak of sores.

W. C. ALVAREZ.

### Sulfanilamide In Urology\*

FROM time to time the medical profession is presented with new remedies for disease. Some of these have only a short life and rapidly disclose their ineffectiveness; others prove of definite value and become a part of the armamentarium of the practicing physician. Perhaps the most useful new drug in many years is sulfanilamide, and early trials have indicated its great value in many fields of medicine. Sulfanilamide, however, is a potent drug, and because of this it is unfortunate that it has been given so much

\*From the Section on Urology, The Mayo Clinic, Rochester, Minnesota.

publicity in the lay press. It is up to the medical profession, therefore, to attempt to control its use. Time alone can reveal its dangers, and until these are known we doctors must proceed cautiously with it.

Sulfanilamide is of the greatest value in urology. The early work of Colston and experience with the drug at The Mayo Clinic in cases of gonorrhea have been most encouraging. Its present widespread use in this field, however, must be looked on with some apprehension, particularly when it is dispensed without limitation. Every patient taking this drug should be seen regularly by his physician. Approximately 10 per cent of individuals cannot take the drug at all, and a certain number of the remainder will develop toxic manifestations such as headache, tinnitus, vertigo, nausea, and malaise, which must be watched closely. Any signs of cyanosis or dermatitis must be watched for, and the development of either of these conditions usually makes it necessary to discontinue administration of the drug. Elevation of temperature and signs of anemia must also be watched for. Agranulocytosis and severe hemolytic anemias have been reported and these may be of a serious nature.

In the treatment of infections of the urinary tract other than gonorrhea, sulfanilamide has been of inestimable value. However, it has the same limitations as far as its ability to eradicate infection as has mandelic acid. On the other hand, since it does not depend so completely on the pH of the urine for its effectiveness as does mandelic acid, it is of great value in treating those infections in which urea-splitting organisms, such as the *Proteus* group, are present. In addition, in those cases in which the infection of the urinary tract is associated with prostatitis, sulfanilamide has proved far more effective than mandelic acid, as it is apparently excreted in the prostatic secretion and exerts a specific local effect.

It is still felt by most urologists, however, that mandelic acid should be the drug of choice in uncomplicated cases, and that sulfanilamide should be kept as an "ace up the sleeve." Until more is known of the dangers of administering sulfanilamide, therefore, let us watch closely each individual under treatment. If this is done, practicing physicians will find sulfanilamide to be a most valuable adjunct to therapy.

EDWARD N. COOK

### Bath Accidents

SOMEWHERE it has been said that half the accidents occur within the home. However that may be, the bathroom has proven itself a dangerous place.

The bottom of a bathtub must be placed on a slant for proper drainage and the sides curved for sanitary purposes. This setting only serves to make the wet porcelain the more conducive to falls.

Broken arms and legs are not uncommonly encountered by physicians. Some much more serious and unusual accidents, however, have come to our attention. Not long ago an elderly woman failed to place a rubber mat in the bathtub when standing under a shower and fell against a fixture, literally dislodging one eye. An army officer some years ago fell in a tub and became impinged on the handle of a faucet which penetrated between his cricoid and thyroid cartilages, causing his death from strangulation before he was discovered. Another unusual accident occurred when a man stepping from a shower slipped on the wet tiling and put his foot through a French door. The resulting laceration almost proved fatal before the hemorrhage could be controlled.

Electric plugs have no place in a bathroom, especially one placed within reach of a tub. One known fatal accident occurred when a youngster reached from a tub with a wet hand hand to disconnect an electric heater.

Porcelain handles to faucet or shower fixtures have been the frequent cause of rather serious accidents. Force exerted on the handle causes it to break and the sharp edges of the porcelain may sever the tendons in the palm. Twelve such cases, for the most part deformities resulting from such an injury, were recently reported from the Mayo Clinic. The early recognition of the extent of the injury and early suture of the severed tendon are important. Porcelain handles were chosen for their appearance but are being replaced by chromium-plated brass handles, the chromium being much more lasting than nickel, which was formerly used.

Certain unnecessary hazards incident to baths can be eliminated by the construction and equipment of the modern bath room. Against those which cannot be eliminated the public should be warned.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics  
of the  
Minnesota State Medical Association

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## Illustrated Constitution

After two years of study, discussion and revision, the new constitution of the Minnesota State Medical Association which had its final approval at the May meeting of the House of Delegates in Saint Paul is now printed and ready for distribution.

The objective of the committee in charge of revision was, first: to enlarge, consolidate, reorganize and bring up to date the somewhat antiquated committee structure of the organization; second, to rearrange in a more logical and convenient order the detail of the constitution and by-laws. Very few changes were made in the actual provisions of the constitution.

Dr. C. B. Wright was chairman of the committee which devoted much time and hard work to the undertaking. Members were Dr. E. S. Boleyn, Dr. W. F. Braasch, Dr. W. A. Fansler, Dr. W. H. Hengstler, Dr. J. C. Hultkrans, Dr. E. A. Meyerding, Dr. F. J. Savage and Dr. C. L. Scofield.

The new committee structure is inclusive, logical and well planned to meet all demands that may be made upon the organization. It has the approval of the Bureau of Legal Medicine of the American Medical Association and has been admired by many other state organizations.

A real novelty in printed constitutions and a very handy aid to understanding the organization is provided in illustrative charts that show the exact structure and sub-structure of the two groups of committees, scientific and non-scientific.

Copies of the new constitution have already been sent to all officers, committee chairmen and other specially interested persons. Any member who wants a copy may write for it to state headquarters, 11 West Summit, St. Paul.

## The Council Meets

A total registration of 4,256 at the 1937 Annual Meeting in Saint Paul was reported to the councilors by Secretary E. A. Meyerding. This figure does not include a considerable number of women and other guests who attended but failed to register. It represented the largest attendance ever recorded at a state meeting in Minnesota.

Several innovations marked the meeting. They were reported upon by Doctor Meyerding as follows:

### New Precedent Established

"The 1937 meeting in Saint Paul will be memorable for many reasons. Notably it gave unprecedented program representation to the scientific, social and economic problems of medicine. No other state medical association has ever been able to gather together at one time and for such a purpose so many of the organizations and groups who are today allied in the delivery of medical care to the people.

### Allied Exhibits

"Most of the organizations represented on the discussion programs also submitted exhibits. Our members who took advantage of the occasion to study these displays appreciated, for the first time, the extensive medical programs of these allied organizations and the importance of a good working coöperation between medicine and these groups.

### \$1,000 Saved

"Incidentally, the participation of many organizations coming from many states made it possible to secure the Saint Paul Auditorium for the meeting without charge. This meant a saving of \$1,000 in the cost of the meeting and was an important factor, obviously, in the financial success of the meeting.



### Congress A Success

"Approximately 1,000 persons registered for the separate organization luncheons and the joint afternoon and evening meetings of the Congress of Allied Professions. They represented the following:

Dentistry	Technicians
Nursing	Anesthetists
Social Service	Hospital and Medical
The Hospitals	Librarians
Pharmacy	Others
Dietitians	

### Foundation Laid

"Speakers were carefully chosen to represent all points of view. The result is undoubtedly a better understanding between us all. Furthermore, a foundation has been laid for a closely knit coöperative organization which will be invaluable in case of need. Credit for the success of the Congress should go principally to Dr. George Earl, general chairman, to Dr. F. J. Savage, committee member, and Mr. R. R. Rosell, committee secretary.

### Industrial Conference

"Industrial medicine is an exceedingly important phase of modern scientific medicine and it is intimately involved, also, with the social and economic future of the doctor. State medical societies have ignored this phase of practice to a considerable extent, leaving it to insurance companies and others to develop, even in its scientific aspects.

"Our 1937 meeting with its Northwest Industrial Medical Conference was the first of its sort in the United States to recognize the importance of industrial practice and, more especially, the importance of retaining leadership in post-graduate education in this department.

### Great Northern Surgeons Attended

"It should be noted that in the large and brilliant assemblage of physicians, state officials, insurance representatives, who attended the sessions and the introductory dinner were all of the Great Northern Surgeons from the Northwest territory of the railroad. This section of the program was very largely the work of President A. W. Adson and credit for its success should go to him.

### Public Health Meeting

"For the public health meeting, another innovation in our annual sessions, the huge Auditorium theater was filled to overflowing in spite of the fact that unavoidable last minute emergencies made it impossible for two popular speakers to be present. The success of this occasion was due in no small measure to the radio publicity given it under the direction and with the personal aid of Dr. R. M. Burns of Saint Paul.

### Exhibits

"Since the meeting of 1932 special emphasis has been placed upon scientific exhibits as a center of interest, as a source of information and as an important incentive to individual members to develop and organize their own scientific studies. In addition to the Mayo Clinic, several individual researchers, among them, Dr. Adolph Hanson, Dr. L. F. Hawkinson and Dr. M. H. Nathanson, have added nationally recognized contributions to scientific knowledge. These contributions have had early demonstrations at these meetings.

"The secretary is of the opinion that many members receive more benefit from exhibits than from the scientific papers read and discussed in the formal program sessions. They are clearly an incentive to research.

### Local Arrangements

"Ample exhibit space, excellent arrangements for telephone and registration, for showing films and slides and for entertainment combined to make the meeting unusually smooth and convenient for everybody. Credit for much of this efficiency should go to the local arrangements committee and particularly to Dr. W. R. McCarthy, chairman, Dr. B. E. O'Reilly, Dr. W. R. Shannon.

### Registration Costs

"It is perhaps difficult for anyone who has never assumed the responsibility for staging a large medical meeting to appreciate the expense involved. These expenses grow yearly as the scientific exhibitors, especially, become more enthusiastic, more experienced and more exacting in their demands for service and equipment. It should be repeated that this phase of our post-

graduate education is perhaps the most valuable and the most significant in the long run of any that we are able to undertake as a society; but it costs money—money which it is impossible to budget out of the dues of members.

"It is, therefore, of particular interest to note that our large meetings of the last five years have actually cost the members less in the aggregate than the small meetings—almost totally lacking in scientific exhibits—of a few years ago.

"In the last five years a total of \$12,034.68 has been turned from the technical fund (accumulated by sale of exhibit space to technical exhibitors) into the general fund of the Association. The increasing patronage of these exhibitors witnesses the growing popularity and importance of our meeting.

### Conclusion

"In conclusion may I be allowed to impress once more upon our members that we are living in new times and that these new times make unexampled demands upon us as the organized body of physicians. One of our best means of arming and educating ourselves as a body to meet these problems is an Annual Meeting that serves as a focal point for discussion, interest and organization for all who are legitimately concerned, for any reason whatever, in the care of the sick."

A resolution expressing appreciation for the meeting and for the work of Secretary Meyerding and all others concerned in planning and conducting it was passed by the Council.

### Councilor District Meetings

Preliminary plans were approved for a series of councilor district meetings to be held throughout the state this fall. Speakers will be state relief and welfare officials, and local relief workers, also state officials in charge of the administration of Social Security programs affecting medicine. The object is to foster a complete understanding on the part of all concerned of all regulations regarding welfare, medical relief and the Social Security program as they affect each district.

### To Study Hospital Service

In response to a request made in person by representatives of the Minnesota Hospital Service Association, a committee was appointed by the Council consisting of Dr. W. W. Will, chair-

man, Dr. A. F. Branton, Dr. F. J. Savage, Dr. L. L. Sogge, Dr. T. H. Sweetser, for the study of hospital service. This committee will confer unofficially with executives of the association when extension of the association's service to new territory is contemplated.

Hospital Service Association representatives who appeared before the Council reported a growing membership and extensions in privileges to Twin City members, with hospitals in both cities participating and no member-patients admitted except at the request of their own physicians.

### For Crippled Children

The Division of Services for Crippled Children of the State Board of Control plans to continue its excellent program of medical care for indigent crippled children another year, Dr. H. E. Hilleboe, director, told the Council. This program provides for professional care by qualified orthopedists, members of the Orthopedic Club, at fees set by club members themselves and in private hospitals, if necessary, at fees set by the hospital association. It provides, also, for training of physio-therapists who will be able to visit patients in their homes and thus shorten hospital stays.

A project for the study of subsequent histories of tuberculous patients discharged from sanatoria which is to be financed by WPA funds was explained to the Council. A motion of thanks to Doctor Hilleboe for his interest and care in keeping the Council informed on matters of medical interest and a motion of appreciation, also, to the State Board of Control on the excellence of its program in general and on its coöperation with the medical profession, were passed.

### "Demonstrations"

Another guest, Dr. E. C. Hartley, explained to the Council differences in interpretation affecting requirements for securing certain funds from the federal government under the Social Security Act that have arisen between the State Board of Health and the Children's Bureau in Washington. The difference is in the interpretation of the word "demonstrations" in care of mothers and babies. The Children's Bureau appears to be of the opinion that demonstrations require actual obstetrical care to be given by representatives of the board of health in "cer-

tain needy areas or areas of financial distress." The State Board of Health, on the other hand, has never provided such care and holds it to be outside the province of a board of health. Funds that might otherwise be available for some needed public health work in the state may, therefore, be held up indefinitely according to Doctor Hartley. It is quite likely that Dr. A. J. Chasley, executive officer, will recommend foregoing the funds entirely if they entail setting up such a precedent in Minnesota.

#### New Film

A film called "The Birth of a Baby" has been approved, according to Doctor Hartley, by the American Committee on Maternal and Child Welfare and also by Chairman R. D. Mussey of the Minnesota State Medical Association's Committee on Maternal and Child Welfare for showing to lay audiences.

The film was produced by a commercial organization but contains no advertising whatever for the commercial house in question. The requirement for showing in any state is a preliminary showing before officers of the state medical society or some qualified group designated by the society. The Council has accordingly requested a showing of the film before the Minnesota Society of Obstetrics and Gynecology at its fall meeting. If the society approves the film, said to be an excellent one, showing will be made in the public theaters according to bookings that will be made direct by the producing company.

#### Control of Diabetes

Dr. R. M. Wilder, chairman of the Committee on Diabetes, presented a plan formulated by his committee for intensive public education on the proper treatment of diabetes. The Council approved the plan which includes coöperation, with a view to obtaining funds and assistance for the work, with other organizations or philanthropically minded individuals. The problems involved in diabetes are growing more serious according to Doctor Wilder and education is regarded as an important means of halting the rising death rate from the disease.

#### Law and Medicine

Ethical and professional problems of law and of medicine have much in common. The two

professions of medicine and law are jointly threatened by some aspects of new social philosophies. The request from the Minnesota State Bar Association, presented to the Council by President Adson, for a joint committee of the Bar Association and the Minnesota State Medical Association was cordially approved. The committee will serve as a discussion group for consideration of matters of mutual interest. The Medical Advisory Committee of the state association will represent the physicians for these discussions.

#### Licensing Physio-Therapists

The necessity for some formal recognition and licensing of physio-therapists was also presented to the Council by President Adson.

Requirements and conditions for the practice of physio-therapy are nowhere standardized. The present chaotic condition allows for dangerous, uncontrolled practice and for out-and-out quackery. This problem confronts the State Board of Medical Examiners with an especial urgency and, at the request of Doctor Adson, a special committee to work out some method of recognition of physio-therapists was authorized. This committee is to consist of three members and it will be appointed jointly by President Adson and President-elect J. M. Hayes.

#### Membership

A paid membership of 2,292 was reported on the date of the meeting. That represented an increase of 163 members over a year ago.

#### Leave Granted

The request of Secretary E. A. Meyerding for a year's leave of absence without pay was granted by the Council. The action was accompanied by an official expression of confidence and loyalty on the part of the councilors. Doctor Meyerding's leave will extend from September 1, 1937, to September 1, 1938.

By direction of the Council, Mr. R. R. Rosell, field secretary, will assume the duties of executive secretary of the organization.

#### Special Session Adjourns

The special session of the Minnesota Legislature that commenced on May 24, 1937, adjourned on July 23, 1937. No so-called healing bills were passed, but the Committee on Public Policy

wishes to call your attention to two or three provisions in the Relief Law that was enacted, and to a provision in the Income Tax Law.

In Chapter 89 the Legislature appropriated the sum of \$11,100,000.00 for relief purposes, of which amount the sum of \$5,850,000.00 is available for direct relief for the fiscal year of July 1, 1937, to June 30, 1938. Among other things Section 4 of the law provides:

"All persons employed on work relief or reemployment projects shall be employees within the meaning of the provisions of the Workmen's Compensation Act, provided that the Council may, in lieu of purchasing Workmen's Compensation insurance, provide for the direct payment of compensation claims out of funds available for such purpose, and if such funds are not available therefor then out of any moneys appropriated by this act."

Section 11 also provides:

"All counties shall permit free choice of vendor to relief clients for relief orders, provided that the vendors thus chosen conform to the regulations of the Executive Council and of the responsible relief agency."

A slight change was made by the Legislature in Chapter 49, in the wording of the provision allowing a deduction for money paid on account of the expense of sickness. That Section now reads as follows:

"Sec. 9. That Laws 1933, Chapter 405, Section 13, subsection (k), be and the same is hereby amended to read as follows:

"(k) Payments for expenses for hospital, nursing, medical, surgical, dental and other healing services and for drugs and medical supplies incurred by the taxpayer on account of sickness of or personal injury to himself or his dependents."

Respectfully submitted,

Committee on Public Policy

By L. L. SOGGE, M.D., *Chairman*

## Medical Relief: New Chapter

With the passage of Section 11 of the Relief Law quoted above, physicians and medical societies are now equipped to begin a new chapter in their relations with officials in charge of relief. Credit for securing this important provision in the law goes chiefly to Dr. C. I. Oliver, State Senator, of Graceville.

For the first time the doctor who is taking care of the indigent sick in his community is armed in the law against the threat of a county physician.

Free choice of physician—provided the physician qualifies under the regulations and lives

up to the regulations—is guaranteed in the law to relief clients in all the counties that accept state aid.

The importance to physicians of this provision can hardly be overstated. County physicians can no longer be hired to take care of all indigent regardless of the feeling of patient or physician in the matter.

In all but the three big cities and a few counties that do not accept state aid, the physician is backed by the law in his belief that indigent patients as well as others are entitled to their own choice of physician.

Physicians who are now engaged in making arrangements with their county welfare boards for a fair recompense for care of the relief clients should be aware of this new clause in the law.

New regulations on the delivery of relief in general are now being formulated at the relief headquarters in Saint Paul. These regulations will be in the hands of Contact Committees of Three and responsible officers as soon as they are ready for distribution.

## True Friendship

Monthly Editorial Prepared by the Medical Advisory Committee

A vacation time in this land of Ten Thousand Lakes gives a man much time for philosophizing. It enables the older man, perhaps, to retrace the steps of youth—the old swimming hole, the place where the lilies hid the elusive bass from his bamboo pole. To the younger one comes an occasion to explore new fields—a canoe trip in the wilderness of the unknown North where the pines and the landlocked salmon all await him. He has time in the stillness along the trout stream for thought. They both make new resolutions which they vow to carry out when they reach home. They will seek to know their neighbors better. They will endeavor to find out the meaning of True Friendship. What is True Friendship? What are its attributes?

Your Medical Advisory Committee believes that True Friendship is like happiness—we have most of it when we give it away. It can never be bought and sold as an article of merchandise and is always better than any kind of charity. True Friendship requires a certain aging pro-



cess to produce the best results, and is something quite different from an interesting acquaintance. If put on a cash basis, it dies. It is something that cannot be hurried but is proven by time.

With these thoughts in mind, let each one better serve our association before the next vacation time by resolving to find one more true friend among the men of our own profession; by pledging to attend medical meetings more regularly, that we may by united endeavor raise organized medical practice to an even higher plane than it is at present in Minnesota.

### "Essentially False"—Miss Lape

The following excerpt from the July *Southern Medicine and Surgery* appears on *The President's Page* of Dr. Wingate M. Johnson.

It is of especial interest because it quotes from an illuminating letter by Esther Everett Lape, compiler for the American Foundation for Studies in Government of the report on American Medicine. Miss Lape denies with tart emphasis *Time's* implication that she played any part in the New York proposal for federalization of medical services to the needy that was rejected at the Atlantic City session of the American Medical Association.

"Upon my return from Atlantic City I found a letter from Dr. McBrayer in which he said, 'I am wondering if New York has been tipped off and if the thing they presented is what the President wants.' I did not take this seriously until I saw *Time* for June 21, and read in it that on April 8, President Roosevelt had been discussing a plan to federalize the medical profession; and that among those present in the first conference was Doctor Kopetzky of New York. Then my admiration of Dr. McBrayer's perspicacity rose to new heights. Another member of the group was Miss Esther Everett Lape, director of the American Foundation study. According to *Time*, the resolutions presented to the A.M.A. by Doctor Kopetzky were based upon Miss Lape's ideas.

"In justice to Miss Lape, let me say that I wrote her immediately after reading the story in *Time*, telling her that my first reaction was one of indignation over the apparent betrayal of the doctors of America; but that before condemning her I was asking for her own statement. I added that I had been greatly interested in the report and did not want to believe the impression left by *Time* that it was a scheme to further the federalization of the medical profession.

"She replied promptly, in part: 'The article in *Time* is insidious. Perhaps I can illustrate briefly the essential falsity of it: It publishes with the article a picture of Mrs. Roosevelt, Mrs. Bok and me, that was taken four years ago, upon a social occasion, and the picture is made to substantiate the impression the reader is intended to get that Mrs. Roosevelt, Mrs. Bok and I are now conspiring to bring about socialized medicine. Neither of these ladies had anything to do with the current report, either directly or indirectly. I do not know in detail the views of either on the question of public health and the organization of medical care.

"I neither devised nor promoted the program which Doctor Kopetzky put up to the New York State Medical Society and which that organization sent through to the House of Delegates of the A.M.A.'"

### Watch for Addict

From a Duluth member:

"Will you report the following information to the proper authority? I think it should be made available to the rest of the profession.

"On July 17 a man about 40 years of age, giving the name of W. B. Cline, came to my office stating that he was vacationing up here while convalescing from a lobectomy supposed to have been done by Dr. Gardner of Saint Paul. He stated that he was living with a sister at Munger, Minn., at present, who he said is a nurse. He wanted dressings and medicines including morphine which according to his story I thought was justified.

"On examination he had a left bronchial fistula, a cavity the size of a fist, in his left chest wall. He stated that he had been spitting up blood and wanted the morphine for that.

"He paid me by check and the check was returned 'no account' and I have since found out that he went to Dr. Cyril Smith of Duluth, with the same story and with the same outcome. He also passed a bad check on the drug store.

"This fellow is undoubtedly a morphine addict as well as a bad check artist and I thought it would be well to tip off other physicians. He is easily recognized by his bronchial fistula. He is a man of about 40 years, around 5 feet 6 inches, pointed features, well dressed and business-like."

From another source we hear that this man used the name "W. B. Cole" in the Twin Cities and that the Duluth Police Department holds a warrant for his arrest. If he is apprehended, the Duluth Police Department should be notified immediately.

## Minnesota State Board of Medical Examiners

### "Divine Healer" Fined \$200 for Prescribing Medicine

Re: State of Minnesota vs. A. C. Martin

On July 27, 1937, A. C. Martin, 54 years of age entered a plea of guilty to an information charging him with practicing healing without a basic science certificate. Martin was sentenced by the Hon. Joseph J. Moriarty, Judge of the District Court at Shakopee to pay a fine of \$200 and costs of \$9.85 or serve one year in the McLeod county jail. Martin stated he would pay the fine and costs.

For some time Martin had been making weekly trips to Brownston where he had a room at the hotel for the reception of patients. He is listed in the Minneapolis city directory as a "healer" residing at 1916 Hennepin Avenue. The evidence showed, however, that Martin said nothing to the patient about being a "divine healer" until after he was arrested. He prescribed alum, boric acid and iodized salt dissolved in water and applied externally to the neck and throat for goiter and also suggested and furnished "gland tablets" to be taken internally. He also applied some massage and while doing this talked to the patient about the weather, rock gardens and many other things disassociated with divine healing.

Upon being questioned by Judge Moriarty the defendant stated he had never studied medicine but that he had been a farmer for many years and had also worked as a traveling salesman. He claimed his "divine healing" as a gift from the Lord at the age of 14. He admitted, however, that when he was sick he consulted and was treated by a physician. He learned about the gland tablets in this manner and purchased them at a drug store in Minneapolis. He stated he was born in Illinois but had lived for many years in Martin county, Minnesota, and for two years at Mankato. He operated at Brownston on Tuesdays; Pine City on Wednesdays; Arlington on Fridays and at his home in Minneapolis on the other days of the week. Martin was told by Judge Moriarty to obey the healing laws of this state or he would spend some time in jail.

The State Board of Medical Examiners wishes to acknowledge the first class coöperation received from Mr. Joseph P. O'Hara, county attorney of McLeod county and Sheriff Alfred Beihoffer. These officials acted promptly when the facts were called to their attention and the result obtained speaks for itself.

### Germania Herb Tea

The Bureau of Investigation reports that the Federal Trade Commission has ordered the Germania Tea Company, Minneapolis, and the Consolidated Drug Trade Products, Inc., Chicago, to stop representing that "Germania Herb Tea" performs any functions in a reducing program other than those of a laxative or purgative, and that "Germania Orange Pekoe Tea" performs any function or has any value in treating obesity, or in a reducing program other than in the caffeine supplied through its consumption. According to a report of the Federal Trade Commission dated June 18, 1937, the principal ingredients of Germania Herb Tea are senna, which has laxative and purgative qualities, and juniper, a diuretic, and the principal ingredient of Germania Orange Pekoe Tea is caffeine. (J. A. M. A., July 31, 1937, p. 375.)

## In Memoriam

Carl M. Anderson  
1881-1937

**D**R. CARL M. ANDERSON was born in Scandinavia, Waupaca County, Wisconsin, November 7, 1881. He received his secondary education at the Scandinavia Academy. He attended Marquette University in Milwaukee from 1907 to 1911 and received the degree of M.D. He then practiced in Wild Rose, Wisconsin, from 1911 to 1921. During the war, he was commissioned first lieutenant in the Medical Reserve Corps. He entered The Mayo Foundation January 3, 1921, as a special student in otolaryngology. He became first assistant in the Section on Otolaryngology and Rhinology, The Mayo Clinic in January, 1924, and associate in 1925. He was appointed instructor in otolaryngology in 1925 and assistant professor of otolaryngology in 1929 in The Mayo Foundation. He has written articles on otolaryngological subjects in the last twelve years.

The position Dr. Anderson had attained in his chosen field of medicine was well deserved. He was first of all a fine gentleman and family man. He possessed a very pleasing professional poise, was a keen observer, a very skillful surgeon, a loyal associate and had an unusually good sense of organization responsibility. He was endowed with especially good common sense and was very tolerant of any shortcomings in others. One always knew he would do or say what he thought was right. His confrères and nonprofessional associates will greatly miss his genial personality.

Dr. Anderson was a member of the American Medical Association, the Alumni Association of The Mayo Foundation, the Southern Minnesota Medical Association, the American Academy of Ophthalmology and Otolaryngology, the American Laryngological, Rhinological and Otolological Society, the Minnesota Academy of Medicine and Sigma Xi.

Dr. Anderson died at his home in Rochester, August 10, 1937, of coronary thrombosis.

Jacob Fowler Avery  
1873-1937

**D**R. JACOB FOWLER AVERY was born at Poughkeepsie, New York, January 19, 1873. He graduated from Central High School in Minneapolis in the class of 1892, and received his medical diploma from the medical school of the University of Minnesota in 1899. After serving his internship at the Minneapolis General Hospital, Dr. Avery practiced at Virginia from 1899 to 1901, at Aitkin from 1901 until 1906, when he moved to Minneapolis. He retired from active practice in Minneapolis in 1932 on account of coronary disease, and moved to La Jolla, California, where he died June 25, 1937.

## IN MEMORIAM

Dr. Avery was married June 4, 1902, to May L. Esmond, who with one son, Esmond, of Detroit, Michigan, survive.

During the World War, Dr. Avery was commissioned captain in the Medical Corps and entered active service August 27, 1917 at Fort Riley. He served as surgeon at Camp Lewis, Washington, for the 44th Infantry, and later for the 39th Field Artillery. He was ordered to Honolulu March 15, 1919, and discharged from Camp Dodge October 14, 1919, to the rank of Colonel in the Medical Reserve.

Dr. Avery had for many years been a member of the Hennepin County Medical Society and upon retirement became an honorary member. He was also a member of the Minnesota State Medical and American Medical Associations. At one time he was a member of the Minnesota Society of Internal Medicine, and he was a fellow of the American College of Physicians. While practicing in Minneapolis he was a member of the staffs of Northwestern and Abbott hospitals.

### Frederick Hyde Bethune

DR. FREDERICK H. BETHUNE died at his home in Emo, Ontario, July 28, 1937.

Dr. Bethune was the first doctor to practice in the Rainy River district west of Fort Francis, when he began practice at Emo in 1899.

During the World War, Dr. Bethune served in France with the Canadian Army Medical Corps as captain with the 141st Battalion.

Dr. Bethune is survived by his widow, two sons, Alex and Robert, and two daughters, Kathleen and Viola.

In addition to practicing medicine, Dr. Bethune was greatly interested in mining, and in recent years operated a fox farm at Emo.

### Frederick Chetlain Drenning 1867-1937

DR. F. C. DRENNING, a resident for the past forty-five years of Duluth, died at his home July 25, 1937, at the age of sixty-nine, from rupture of an iliac aneurysm.

Born November 19, 1867, at Galena, Illinois, the son of Thomas G. and Adele Chetlain Drenning, Dr. Drenning attended school at Galena and received his medical degree from Northwestern Medical School in 1892. The same year he was licensed in Minnesota, when he located in Duluth. Besides being in general practice, he was Medical Director of the Modern Samaritans from 1927 to 1931.

Dr. Drenning was a member of the St. Louis County Medical Society, the Minnesota State and American Medical Associations, and a member of the staffs of St. Luke's and St. Mary's Hospitals.

In 1912 Dr. Drenning married Eva Thayer Niles. One daughter, Verna Thayer Drenning, now Mrs. J. E. Brown of Duluth, resulted from the union. Following the death of Mrs. Drenning, he married in 1930 Ethel

H. Nelson, who, as well as two sisters, Cecile and Julia Drenning, both of Galena, Illinois, survive him.

If the name of Dr. Drenning did not scintillate afar from the great cerebrum of Minnesota medicine and if his tongue was usually quiet at local meetings, his steady life at least, contributed much to the vertebral structure of the profession. To more than this, few of us may aspire. If he had faults, they remained undiscovered by one who knew him well for many years.

J. M. R.

### Martin Josef Fiala 1903-1937

DR. FIALA, born in Copenhagen, Denmark, a graduate in 1929 of Western Reserve University in Cleveland, and associated in Dermatology and Genito-Urinary Diseases with the Duluth Clinic in Duluth since 1930, died August 10, 1937, at Rochester, Minnesota, after an operation for a tumor at the base of the brain and overlying the fourth ventricle.

Dr. Fiala was representative of that sturdy group of doctors who came in great numbers from the Scandinavian countries to this Northwest. Many more came in the decades preceding the beginning of this century than came later; and many were trained in medicine in their home country. They have left an indelible impress upon our medical traditions and they helped in a very great measure to advance the citizenship and political ideals of their countrymen in America.

Dr. Fiala, representing a much younger group, came first to Baltimore following an international Scout meeting in Copenhagen. He was an active Scout at the time and mentioned to certain of the representatives from the United States his ultimate great desire to come to this country. Some of them invited him to come to Baltimore. The invitation accepted, he appeared within two years full of energy and explained to these Scout friends that it was his intention to remain and study medicine. It happened that he had been efficiently trained in anatomy in his home country. His Baltimore friends found an opportunity for him to work with Professor T. Wingate Todd at Western Reserve in Cleveland. Depending almost entirely upon his own resources, he carried through with all the difficulties of language and a heavy curriculum in one of our best medical schools.

He came to Duluth and served an internship at St. Luke's Hospital. In 1929, he married Grace Fairchild, daughter of the late Dennison Fairchild and Mrs. Fairchild of Duluth.

His death of an affliction that defied the greatest of medical skill for its alleviation leaves in his immediate family his wife and three young sons, Martin Josef, Dennison and John. Both of his parents are still living in Copenhagen as well as two brothers. He made friends everywhere. His passing is mourned by everyone, but particularly by the numerous Danes in northern Minnesota who found in him a sturdy transplant from the mother land.

## IN MEMORIAM

### Earl Jamieson 1877-1937

**D**R. EARL JAMIESON, practicing physician and community leader in Walnut Grove for nearly thirty years, died July 17, at the age of sixty, from meningitis.

Doctor Jamieson was born in Moline, Illinois, May, 1877. He received his medical education at the Hahnemann Medical College of Chicago and at the University of Illinois Medical School. He served his internship at Cook County Hospital in Chicago and for some time thereafter served as physician for the Hull House Settlement in Chicago. In August, 1907, he moved to Walnut Grove, Minnesota, and had remained there in general practice ever since with the exception of seven months spent as captain in the Medical Corps of the United States Army at Travis, Texas.

During his entire residence in Walnut Grove Doctor Jamieson served as a member of the school board. For six years he was chairman of the Board and the recently completed school building was largely the result of his efforts.

In 1915, he was married to Miss Mary Blanche Walker of Walnut Grove, who died a year later. In April, 1919, he was married a second time to Miss Hazel Jones of Mankato, who, together with their daughter, Doris, survives him. He is survived also by a brother, Guy Jamieson of Moline, Illinois, and by four sisters, Blanche Jamieson and Louise Alsterlund of Moline, Grace Jamieson of Ann Arbor, Michigan and Mrs. Lewis Weldt of East Falls Church, Virginia.

The illness which caused his death followed a minor operation which he underwent a few days earlier for the removal of nasal polyps.

Doctor Jamieson was a member of the American Medical Association, the Minnesota State Medical Association and the Redwood-Brown County Medical Society.

### Amos Leuty 1868-1937

**D**R. AMOS LEUTY, a prominent and esteemed resident of Morris, Minnesota, where he had lived for thirty-four years, died very suddenly on June 24, 1937, at the age of sixty-eight.

Dr. Leuty was born in a log cabin in Marion County, Iowa, December 5, 1868, the youngest of a family of thirteen children. His father died when he was but two years old and he was reared for the most part in the homes of his older brothers until he was eighteen. At the age of nineteen he bought eighty acres of land, farmed for five years and made and saved money each year.

At the age of twenty-four he started to school and took a business course at Highland Park College and then obtained his medical degree from Drake University. When he was finally through school he owed less than \$250 and owned 160 acres of land which was worth about \$8,000. Starting with nothing, in ten years' time he had obtained a medical education and had accumulated about \$8,000.

When a youth, Dr. Leuty made a trip to South Dakota in a covered wagon with one of his brothers and saw surveyors deserting their work to dig into Indian mounds. He became intensely interested and upon trying it himself he opened what proved to be the burial place of a chieftain. Collecting Indian relics became from that time a lifelong hobby and he had a wonderful collection.

Dr. Leuty took a deep interest in many civic and fraternal activities in Morris. He served for twenty-one years on the school board and was for several years a member of the city commission. He was a member of the Christian Church. He was also a member and Past Worshipful Master of the Golden Sheaf Lodge No. 133, A. F. and A. M., and a member and Past Worthy Patron of the Corinthian Chapter, No. 77, O. E. S.

Dr. Leuty was married to Irma Carter at De Soto, Iowa, October 14, 1896. Mrs. Leuty died June 3, 1933. They are survived by one son, Dr. Robert Leuty of Morris and two daughters, Mrs. C. B. Thomas of Pipestone and Mrs. Edward G. Hirt of St. Cloud.

### Olaf I. Refsdal 1877-1937

**D**R. OLAF I. REFSDAL of Hayfield, Minnesota, passed away on January 14, 1937, at Austin, Minnesota. Some months ago, ill health forced his retirement from practice and he went to Austin to reside with his daughter, Mrs. Melvin Lagervall.

Born in Sogn, Norway, December 24, 1877, Dr. Refsdal came to this country as a youth and lived with an uncle at Decorah, Iowa, while attending high school. He later attended Breckenridge College, Hamline University, the summer schools of the University, and obtained his medical degree from Northwestern in 1910.

In 1908 Dr. Refsdal was married to Sara Christlock of Wanamingo, Minnesota, and following his graduation he began practice at Marine Mills, Minnesota. In 1913 he moved to Hayfield where he has continuously practiced.

Dr. Refsdal is survived by his widow and four daughters, Mrs. Melvin Lagervall of Austin, Mrs. George Rodger of Chicago, Mrs. John Woodward of Austin, and Ellen who attends school in Austin.

Dr. Refsdal was held in esteem by his many friends and patients in the locality where he had practiced for twenty-three years.

### E. D. Stoddard

**D**R. E. D. STODDARD, formerly of Stewartville, Minnesota, died at his home in Los Angeles, California, May 28, 1937.

Dr. Stoddard began practice in High Forest, Minnesota, in 1875 and moved to Stewartville in 1890. He was in partnership with Dr. Frank Burns and established the drug firm of Stoddard and Wood.

Dr. Stoddard was married at High Forest about 1878, but had no children. He was eighty-seven years old at the time of his death, and had not been actively engaged in practice since moving to Los Angeles.



## OF GENERAL INTEREST

Dr. B. Scodel of Saint Paul, has located in Maynard for the practice of medicine.

\* \* \*

Dr. John M. Adams has become associated as pediatrician with the Nicollet Clinic.

\* \* \*

Dr. R. G. Swenson of Harris, has purchased the practice of Dr. G. E. Schoofs of North Branch.

\* \* \*

Dr. Donovan Penheiter is now associated with Dr. Leroy J. Larson of Bagley, in the practice of medicine.

\* \* \*

Dr. Sam Levi has become associated with Dr. H. A. Fasbender of Hastings, in the practice of medicine.

\* \* \*

Dr. O. F. Mellby of Thief River Falls, has recently completed his term of office as president of the Rotary Club.

\* \* \*

Dr. W. C. Ferguson of Fargo, North Dakota, has located at Walnut Grove, Minnesota, for the practice of medicine.

\* \* \*

Dr. W. G. Paradis, formerly superintendent and medical director of Sunnyrest Sanatorium, is planning to enter private practice in Canton, Ohio.

\* \* \*

Dr. S. C. Jump, formerly of Madison Lake, has located at Kasson, taking over the practice of Dr. F. D. Smith who recently moved to Rochester.

\* \* \*

Dr. W. G. Rogne, formerly of McClusky, North Dakota, has become associated with Drs. G. M. Helland and J. W. Helland of Caledonia, in the practice of medicine.

\* \* \*

Dr. W. H. Rumpf, of St. Cloud, has announced his withdrawal from the St. Cloud Clinic and the establishment of private offices for the practice of medicine and surgery.

\* \* \*

Dr. Arthur A. H. Koepsell has begun practice at 714 Lowry Medical Arts Building, Saint Paul, in association with Dr. James J. Swenson. His practice is limited to obstetrics and gynecology.

\* \* \*

Dr. Sam Leonard will leave the latter part of September for Cook County Graduate School of Medicine, where he will take postgraduate work in surgery. He will return in six months.

\* \* \*

Dr. Earl Jamieson has returned to Brainerd after spending several months in Chicago, where he did eye, ear, nose and throat surgery at the Cook County Hospital and at the University of Illinois.

Dr. Joseph J. Stratte of Grand Forks, North Dakota, will be in Hallock, Minnesota, on Saturdays and Sundays for the convenience of his patients. Dr. Stratte formerly was located at Hallock.

\* \* \*

Dr. A. V. Denman of Mankato, is planning to hunt big game in Alaska, following a trip which he and Mrs. Denman, Dr. and Mrs. J. S. Holbrook and Dr. J. A. Hielscher, are taking to Fairbanks, Alaska.

\* \* \*

Dr. Ralph T. Knight, Minneapolis, has completed a period of fifteen months devoted to the study of regional and general anesthesia at the Mayo Clinic and has resumed practice at 1543 Medical Arts Building.

\* \* \*

Dr. Charles Vandersluis of Bemidji, has moved into his new offices, known as the Dr. Charles Vandersluis Medical Building. In the new building are contained the office, consultation rooms, treatment rooms and laboratory, all on the street level.

\* \* \*

Dr. C. C. Erickson, formerly of Strong Memorial Hospital in Rochester, was recently married to Miss Bernice Katherine Peck, daughter of Dr. and Mrs. L. D. Peck of Hastings. Dr. Erickson is now affiliated with Duke University, at Durham, North Carolina.

\* \* \*

Dr. Kenneth L. Nelson of Minneapolis, has become associated with the staff of the Willmar Hospital Clinic in the practice of medicine and surgery. Dr. Nelson graduated from the University of Minnesota medical school, and served his internship at Miller Hospital in Saint Paul.

\* \* \*

Dr. E. W. Wahlberg, of Isle, has moved to Morgan, where he will be associated in practice with Dr. William E. Johnson. Dr. Donald M. Brink, of Minneapolis, a graduate of the University of Minnesota medical school, has made arrangements to take over Dr. Wahlberg's practice at Isle.

\* \* \*

Dr. Edward C. Rosenow, Sr., Rochester, has received the James E. Stacey award of the University of Cincinnati, consisting of a gold medal and \$100 for recent establishment of the relation of infections in the tonsils to certain spasmodic diseases such as chronic hiccup and torticollis.

\* \* \*

Announcement has been received of the marriage of Dr. George Sather, son of Dr. and Mrs. Allen Sather of Fosston, to Miss Esther Putnam Lewis of Minot, North Dakota. Dr. and Mrs. Sather will make their home in Fosston, where Dr. Sather will be associated in practice with his father.

Dr. Russell Aanes, son of Dr. A. N. Aanes of Red Wing, has taken over the medical offices of Drs. Nilander and Addington at Ellsworth, Wisconsin. He will also have charge of the Ellsworth Hospital. Dr. Aanes graduated from the University of Minnesota medical school a year ago and served his internship at General Hospital, in Minneapolis.

\* \* \*

Dr. Karl E. Sandt, recently House Surgeon in Ophthalmology at the Manhattan Eye, Ear, Nose and Throat Hospital, New York, and Dr. Charles E. Stanford, recently Teaching Fellow in Ophthalmology at the University of Minnesota Medical School, have become associates with Dr. John F. Curtin and Dr. Lawrence R. Boies at 1631 Medical Arts Building, Minneapolis.

\* \* \*

The fifth season of broadcasting by the American Medical Association will begin this fall over the National Broadcasting Company hookup. This season the program will be addressed particularly to teachers and junior and senior high schools, and will come during school hours so it may be utilized directly in the thousands of schools which have radios reaching the class rooms.

\* \* \*

Dr. W. E. Anderson of Saint Paul, has become associated with Dr. O. F. Mellby of Thief River Falls, in the practice of general medicine. Dr. Anderson graduated from the University of Minnesota medical school in 1933 and served his internship at St. Luke's Hospital in Kansas City, Missouri. He also spent a year at the Kansas City General Hospital, and the past year at the Midway Hospital in Saint Paul.

\* \* \*

At the New York World's Fair to be held in 1939 there will be a medical and health building to cost \$425,000, with a floor space of 81,871 square feet, to be devoted to exhibits especially chosen for the enlightenment of the average man. Sections will be devoted to anatomy and physiology, diseases and public health. Dr. Victor Heiser has been appointed chairman of the General Advisory Committee composed of 101 national, state and local authorities on medicine and public health which will plan the exhibits.

\* \* \*

A Duluth naval reserve hospital unit for emergency in the event of war, riot or disaster, has been organized by Dr. Gage Clement, upon the request of Commander A. O. Robideau of Duluth.

Physicians who have been appointed heads of departments include Dr. P. S. Rudie, surgery; Dr. D. W. Wheeler, medicine; Dr. M. H. Tibbetts, orthopedics; Dr. Walter E. Hatch, genito-urinary surgery; Dr. M. F. Fellows, eye, ear, nose and throat; Dr. L. R. Gowan, nervous and mental diseases; Dr. Arthur H. Wells, pathology; Dr. George W. Lawson, dentistry, and Dr. Gage Clement, radiology.

All of the physicians are commissioned officers in the naval reserve corps.

## HOSPITAL NOTES

Dr. W. H. Valentine of Tracy, is planning to build a new \$75,000 modern fire-proof 30-bed hospital.

\* \* \*

The new detention unit of the State Hospital at St. Peter has now been completed, and approximately 60 patients have been moved into the new unit.

\* \* \*

St. Barnabas Hospital, Minneapolis, announces the installation of 400,000-volt Kelley-Koett X-Ray Therapy equipment for the treatment of malignant tumors and other conditions for which this type of therapy is advisable.

Unique features of this installation are as follows:

There is complete protection against electrical shock.

The patient is protected by the x-ray proof construction of the treatment unit.

The x-ray tube is immersed in oil.

The transformer and x-ray tube are constructed in one unit.

The patient is in constant communication with the operator by two-way radio phone.

Treatments are given in large air-conditioned rooms which assures greater comfort for the patients.

All treatments are given under supervision of Russell W. Morse, M.D., and Ames W. Naslund, M.D.

## TREATMENT OF STREPTOCOCCIC INFECTIONS WITH SULFANILAMIDE

Sulfanilamide is the nonproprietary term adopted by the Council on Pharmacy and Chemistry for para-aminobenzenesulfonamide. A report has not been issued yet by the Council on the acceptability of the preparation. Long and Bliss have supplemented their preliminary report on the use of sulfanilamide and its dye derivative, the disodium salt of 4'-sulfamidophenyl-2-azo-7-acetylamino-1-hydroxynaphthalene-3,  $\beta$ -disulfonic acid (Prontosil) in the treatment of streptococcic infections by more extended publication. They were able to confirm in part the reports of European investigators regarding the efficacy of sulfanilamide and its chemical derivatives in the treatment of beta-hemolytic streptococcic infections in mice. These authors also report the results of treatment of seventy persons ill with infections due to beta-hemolytic streptococci. It seems logical to believe, they state, that the prompt recognition of the nature of hemolytic streptococcic infection plus the adequate administration of the specific chemotherapeutic agents will greatly lessen mortality and duration of illness. (J.A.M.A., March 20, 1937, p. 976.)

## REPORTS and ANNOUNCEMENTS

### MEDICAL BROADCAST FOR SEPTEMBER

The Minnesota State Medical Association Morning Health Service

The Minnesota State Medical Association broadcasts weekly at 9:45 o'clock every Saturday morning over Station WCCO, Minneapolis and Saint Paul (810 kilocycles or 370.2 meters).

*Speaker:* William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota. The program for the month will be as follows:

September 4—Diphtheria and Smallpox

September 11—Duodenal Ulcer

September 18—Insomnia

September 25—Cancer of the Mouth

### AMERICAN HOSPITAL ASSOCIATION

The thirty-ninth annual convention of the American Hospital Association will meet at Atlantic City, September 13 to 17, 1937.

A comprehensive program will include such subjects as nursing, dietetics, social service, administration, trustees, group hospitalization, et cetera, and there will be displayed some 200 technical exhibits.

Administrative and professional personnel of all hospitals are invited to attend.

### ASSOCIATION OF MILITARY SURGEONS

The forty-fifth annual convention of the Association of Military Surgeons of the United States will be held at the Ambassador Hotel, Los Angeles, October 14, 15 and 16, 1937.

The opening session October 14 will be addressed by the president, Rear Admiral P. S. Rossiter, Surgeon General of the Navy, and the following scientific program will be presented:

"Fleet Medicine." Capt. George A. Cottle, M.C., U. S. Navy.

"Eyes in Aviation." Maj. J. S. Chase, M.C., U. S. Army, Ret.

"Ears in Aviation." Lt. Col. I. H. Jones, Med. Res. U. S. Army.

"The Training of Medical Officers in a Major War Emergency." Col. Charles Decker, U. S. Army (D.E. O.), Ret.

"Physiotherapy in the Next War." Capt. Leroy Lowman, Med. Res. U. S. Army.

"Modern Typhoid Treatment." Lt. Comdr. Albert G. Bower, MC-V (S) U. S. N. R.

"Hospital Ships in the World War: Lessons to be Learned from Them." Capt. Lucius Johnson, M.C., U. S. Navy.

"Anesthesia in Shock." Lt. Albert Wineland, MC-V (S) U. S. N. R.

"Submarine Medicine." Lt. A. R. Behnke, M.D., U. S. Navy.

"Emergency Plastic Surgery." Chairmen's Address. Lt. Comdr. Howard L. Updegraff, MC-V (S) U. S. N. R.

"The Blood Sedimentation Rate in Dental Infections." Comdr. C. V. Rault, D. C., U. S. Navy.

"The Medical Specialists Units, U. S. N. R." Comdr. Albert Soiland, MC-V (S) U. S. N. R. Ret.

"Surgical Treatment of Low Back Pain." Guest Speaker. Col. Howard Naffziger, Med. Res. U. S. Army.

### MISSISSIPPI VALLEY MEDICAL SOCIETY

The third annual meeting of the Mississippi Valley Medical Society will be held at Quincy, Illinois, September 29, 30, and October 1. A most ambitious program has been arranged consisting of forty-eight teachers and clinicians who will give over sixty lectures and demonstrations in the three-day intensive session.

The first day will be an All-St. Louis program with eighteen clinicians on the program; on the second day there will be groups from Rochester and Chicago; on the third day the speakers will come from a wide territory. An innovation this year will be two short courses of instruction, (four hours each)—one on "Surgery of the Neck" by Dr. Lindon Seed, Associate Professor of Surgery, University of Illinois College of Medicine and another "interpretation of Clinical Laboratory Findings" by Dr. M. Pinson Neal, Professor of Pathology, University of Missouri School of Medicine.

At the annual banquet to be held on September 30, the speakers will consist of Dr. R. K. Packard, President, Illinois State Medical Society; Dr. D. S. Conley, President, Missouri State Medical Society and Dean of the University of Missouri School of Medicine; Dr. E. M. Myers, President of the Iowa State Medical Society; and Rev. A. M. Schwitalla, Ph.D., Dean of St. Louis University School of Medicine. There will be large technical and scientific exhibits. A complimentary stag supper will be given on September 29.

The meeting is open to all ethical physicians. A detailed program may be obtained from Dr. Harold Swanberg, Secretary, 209-224 W. C. U. Building, Quincy, Illinois.

### PAN AMERICAN MEDICAL ASSOCIATION

The Association has chartered the S. S. Queen of Bermuda for its seventh cruise congress to Havana and the West Indies. The Bermuda sails January 15, 1938, from New York, returning the morning of January 31.

The Bermuda will serve as hotel for members during the five-day stay at Havana where scientific sessions with clinics will be held for three days for the various medical and dental specialties. Meetings will also be arranged at the other ports of call: Port-au-Prince,

## REPORTS AND ANNOUNCEMENTS

Haiti; Trujillo City, Santo Domingo, and San Juan, Puerto Rico. The proposed trip offers attractions of scientific value as well as social contacts and relaxation.

Applications may be made to the Pan American Medical Association, 745 Fifth Avenue, New York City.

### RESERVE OFFICERS' TRAINING COURSE

The ninth annual training course for Medical Department reservists of the Army and Navy will be held at the Mayo Foundation, Rochester, Minnesota, October 3 to 16, 1937.

This training course was first inaugurated by the Seventh Corps Area at the request of the Mayo Foundation to give training in military medicine to the young medical men connected with the foundation. Other reserve officers requested permission to enroll and to take advantage of the opportunity to attend the clinical presentations during the morning hours. Such permission was granted and attendance has become so increasingly popular that it is now necessary to limit enrollment.

The program will follow the plan of past years. The morning hours will be devoted entirely to professional work in special clinics and study groups. Officers in attendance may select the course they wish to follow from the wide variety of presentations offered. The afternoon and evening will be devoted to a medico-military program under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy).

This training is on an inactive duty status and is without expense to the government. Enrollment is open to all Army and Navy reservists of the Medical Departments in good standing. Applications should be submitted to the Surgeon of the Seventh Corps Area, Omaha, Nebraska, or to the Surgeon of the Ninth Naval District, Great Lakes, Illinois. Enrollment is limited to two hundred.

The Surgeons General of the Army and Navy have signified that they will attend and it is believed that the Surgeon General of the Public Health Service will also appear on the program.

KENT NELSON,  
Colonel, Medical Corps, Surgeon.

### POSTGRADUATE MEDICAL INSTITUTES UNIVERSITY OF MINNESOTA

1937-1938

The Center for Continuation Study of the University of Minnesota in cooperation with the Medical and Graduate Schools and the Minnesota State Medical Association will offer a series of postgraduate medical courses for practicing physicians from October, 1937, to May, 1938, inclusive. Each course will start the first Monday of the month and last one week.

#### Place

The didactic lectures and demonstrations will be given in the special class rooms of the Center for Continuation Study on the Campus where the postgraduate

physicians stay; the clinics will be held in the wards of the University of Minnesota Hospitals, Minneapolis General Hospital, Ancker Hospital, Saint Paul, and affiliated institutions.

#### Faculty

The faculty will be selected from the Medical School, the medical division of the Graduate School of Minneapolis and Rochester, Minnesota, the membership of the Minnesota State Medical Association and clinicians from other medical centers.

#### Registration

Any licensed physician who is a member of a county or state association or of the American Medical Association may register for the courses. Registration of physicians residing outside of Minnesota is welcomed. Each course will occupy the full time of the physician from Monday to Saturday, inclusive. Part time registration may be accepted in special instances, but only after special arrangement in advance.

#### Room and Board

Postgraduate physicians should plan on living in the dormitory of the Center for Continuation Study. A double room with bath may be obtained for \$6.25 a week for each person; a single room without bath for the same price. Other rates are accordingly low. Postgraduate physicians may bring their wives or other members of the family and live in the Center Building for the week. The dining room is located in the same building. Breakfast is 35 cents, luncheon 45 cents and dinner 65 cents. A large parking garage is located in the same building. Day time parking is 20 cents; 24 hour parking is 50 cents. The class rooms, also located in the building, are commodious and well arranged. One of the unique features of Minnesota's contribution to adult education is this building said to be the only one of its kind in this country.

#### Tuition

The tuition for the first course from October 4 to 9, is \$25.00. The registration fee of \$3.00 should be sent in advance in order to secure a place. Although the registration fee cannot be refunded, it will be applied on the tuition when the physician reports for class work. The tuition for each course will be announced in advance.

#### Disease of the Heart

With the cooperation of the Heart Committee of the Minnesota State Medical Association a special course in Disease of the Heart has been arranged for October 4 to 9, inclusive. It is planned primarily for those physicians who wish to know about the practical aspects of the diagnosis and treatment of disease of the heart and who do not have extraordinary facilities for the study of cardiac patients. Although emphasis will be placed on the clinical side, important contributions will be made by members of the Departments of Anatomy, Bacteriology, Pathology, Physiology and Pharmacology. The clinics will be held in the wards of the University of Minnesota Hospitals, Min-

MINNESOTA MEDICINE



## REPORTS AND ANNOUNCEMENTS

neapolis General Hospital, Ancker Hospital, Saint Paul, and the Lymanhurst School for Rheumatic Children. Every variety of heart disease will be demonstrated, and each physician will be given an opportunity to examine the patients and discuss the treatment with the clinicians. Electrocardiographic methods and other refinements of diagnosis which have been developed in recent years will be described and demonstrated.

### Certificate

Certificate of attendance will be issued by the University of Minnesota upon recommendation of the Chairman of the Institute and the Director of the Center for Continuation Study.

### Advanced Registration

Please write at once if you are interested in the course on Disease of the Heart. The most successful of last year's courses were those in which the University learned in advance of the formation of the programs, the wishes of the physicians who planned to attend.

### Future Courses

If you plan on taking any postgraduate work this year consider the possibilities at the University of Minnesota. We have tentatively planned a number of subjects, but we will be guided entirely by the desires of our physicians as to the final selection and content.

### Information

Address all correspondence to the Director or Dr. William A. O'Brien, Medical Representative, Center for Continuation Study, University of Minnesota, Minneapolis. Physicians planning on coming during the Football Season should make their own arrangements for tickets with the Athletic Ticket Office.

## AMERICAN UROLOGICAL ASSOCIATION

With a total of 856 persons registered, the thirty-fourth annual meeting of the American Urological Association, held June 28-July 1 in Minneapolis, achieved the distinction of being the largest convention ever held by that organization.

A special train from Chicago to Minneapolis brought the eastern and southern members who were able to make connections at that point and added to the enjoyment of the occasion.

The scientific program was an outstanding one, featuring the Guiteras Lecture given this year by Dr. William F. Braasch of Rochester, Minnesota, who spoke on "Clinical Data with Chronic Pyelonephritis," and the presidential address of Dr. Gilbert J. Thomas of Minneapolis, who presented a paper on "The Treatment of Renal Tuberculosis." The program was divided into three symposia on hydronephrosis, renal tumors, and chronic prostatitis.

Among the papers given at the meeting, five others were presented by Minnesotans. These were: "A Plastic Operation for Stricture at the Uretero-Pelvic Junction," Dr. Frederic E. B. Foley of St. Paul; "Operative Results in Hydronephrosis," Drs. Waltman Walters, Hugh Cabot, and James T. Priestley of Rochester;

"The Effects of Sudden Emptying of the Chronically Distended Bladder," Dr. Charles D. Creevy of Minneapolis; "Classification of Renal Tumors," Dr. Elexious T. Bell of Minneapolis; "The Relationship of Lesions of the Nose, Throat, Accessory Sinuses and the Eye to Chronic Pyogenic Prostatitis," Dr. Walter K. Haven of Minneapolis.

The sixty scientific exhibits exceeded in interest and number the displays of the previous meetings. Three were awarded prizes. First prize was given to Dr. Rubin H. Flocks of Iowa City, Iowa, for his display on "Arterial Distribution within the Prostate Gland"; second prize to Drs. Alexander Randall and Edward Campbell of Philadelphia, for "Origin of Renal Calculi"; third prize to Drs. Collier, Maddock, and Winslow of Ann Arbor, Michigan, for "Water Balance in Surgery." Honorable Mention was given to Dr. Frederic E. B. Foley of St. Paul for his exhibit on "Evolution of Pelvic-Uretero-Plastic Surgery."

Entertainment had been provided for the visitors, and Golf Day, on Monday, June 28, proved to be an outstanding event. Under the direction of Dr. John M. Culligan of Saint Paul, a Calcutta sweepstake was arranged. The gold cystoscope, a prize awarded annually, was given to Dr. John B. Lowmes of Philadelphia, while the first cash prize for winning the Calcutta went to Dr. Stanley Maxeiner of Minneapolis.

While the men attended the scientific sessions, a special program had been arranged for the women. This included a tour of Minneapolis, Saint Paul, and the Minnetonka area with visits to the beautiful gardens in that district. Dr. H. E. Diessner of Minneapolis, and Dr. Philip F. Donohue of Saint Paul had charge of the Women's Entertainment Committee.

The leading entertainment feature of the meeting for the members and their families was the Ice Carnival presented in the Saint Paul Auditorium on Tuesday evening. The various amateur skating numbers were skillfully presented, and were dedicated to prominent members and officers of the Association.

The annual banquet was an event of Wednesday evening, being held in the Radisson Hotel, Minneapolis, preceded by the President's reception.

Many private social affairs were given for the members during their visit, and all of these events contributed to the general "holiday spirit."

On Thursday evening, special train took the members and their families to Rochester, where Friday was spent enjoying the special program arranged at the Mayo Clinic under Dr. William F. Braasch. At this time, Dr. William Mayo spoke to the delegates. Friday evening, the special train continued to Chicago, for those who were "homeward bound."

Officers of the Association elected during the meeting were: President, Dr. David W. MacKenzie, Montreal; President-Elect, Dr. Edgar Ballenger, Atlanta; Past-President, Dr. Gilbert J. Thomas, Minneapolis; Secretary, Dr. Clyde L. Deming, New Haven; Treasurer, Dr. James B. Cross, Buffalo.

Members of the Arrangements Committee who worked hard to make the meeting a success were: Dr. Franklin R. Wright, Honorary Chairman; Dr. Oscar

## REPORTS AND ANNOUNCEMENTS

Owre, Vice-Chairman; Dr. Frederic E. B. Foley, Vice-Chairman; Dr. Ernest L. Meland, Secretary-Treasurer; Dr. Charles D. Creevy, in charge of the Scientific Exhibits; Dr. A. G. Wethall, in charge of Rail and Water Transportation; Dr. William F. Braasch, Dr. Philip F. Donohue, Dr. John M. Culligan, Dr. Richard B. Hulsiek, Dr. Walter B. Sexton; Dr. George Earl in charge of the Technical Exhibits; Dr. Hjalmer Simons; Dr. Theodore L. Stebbins in charge of Hotel Arrangements; Dr. Theodore H. Sweetser in charge of Motor Transportation; Dr. H. A. Diessner in charge of Women's Entertainment; Dr. Gilbert J. Thomas in charge of Entertainment.

### INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION

The International Assembly of the Inter State Postgraduate Medical Association of North America, under the presidency of Dr. John F. Erdmann of New York, will be held in the beautiful new public auditorium of St. Louis, Missouri, October 18, 19, 20, 21 and 22, with pre-assembly clinics on Saturday, October 16, and post-assembly clinics, Saturday, October 23, in the hospitals of St. Louis.

The aim of the program committee, with Dr. George Crile as chairman, is to provide for the medical profession of North America an intensive postgraduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner, as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

The St. Louis Medical Society will be host to the Assembly and has arranged an excellent list of committees who will function throughout the Assembly.

A most hearty invitation is extended to all members of the profession who are in good standing in their State or Provincial Societies to be present. A registration fee of \$5.00 will admit each member to all the scientific and clinical sessions.

For further information, write Dr. W. B. Peck, Managing Director, Freeport, Illinois.

### PROGRAM

October 18, 19, 20, 21, 22, 1937

Pre-assembly clinics, October 16; Post-assembly clinics, October 23, St. Louis Hospitals.

ST. LOUIS MISSOURI

Monday, October 18  
8:00 A.M.

Diagnostic Clinic: "Cosmetic Results in the Treatment of Cancerous Skin Lesions."

DR. JOSEPH ELLER, Professor of Clinical Dermatology and Syphilology, New York Postgraduate Medical School, Columbia University, New York, N. Y.

Diagnostic Clinic: "Hypertensive Heart Disease, Manifestations, Diagnosis, Treatment."

DR. FRED M. SMITH, Professor of Theory and Practice of Medicine, State University of Iowa College of Medicine, Iowa City, Iowa.

Diagnostic Clinic: "Deficiency Diseases."

DR. RUSSELL L. HADEN, Chief of Medical Division, Cleveland Clinic, Cleveland, Ohio.

Intermission to Review Exhibits

Diagnostic Clinic: "The Symptoms and Treatment of Injuries of the Spinal Cord."

DR. LOYAL DAVIS, Professor of Surgery, Northwestern University School of Medicine, Chicago, Illinois.

Diagnostic Clinic: "Types of Obesity and Their Treatment."

DR. REGINALD FITZ, Associate Professor of Medicine, Boston University Medical School, Boston, Mass.

Noon Intermission

1:00 P.M.

Diagnostic Clinic: "Surgical Treatment of Peptic Ulcer."

DR. DONALD C. BALFOUR, Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address: "Ulcerative Colitis and Its Surgical Management."

DR. RICHARD B. CATTELL, Lahey Clinic, Boston, Mass.

Address: "The Roentgen Treatment of Infections."

DR. FREDERICK M. HODGES, Professor of Clinical Radiology, Medical College of Virginia, Richmond, Va.

Intermission to Review Exhibits

Address: "Meningitis Secondary to Disease of the Bones of the Skull."

DR. WELLS P. EAGLETON, Newark, New Jersey.

Address: "The Treatment of Urinary Infections in Infants and Children."

DR. JOHN R. CAULK, Professor of Clinical Genito-Urinary Surgery, Washington University School of Medicine, St. Louis, Mo.

Address: "Prenatal Care."

DR. OTTO H. SCHWARZ, Professor of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Mo.

Address: "Granulomatous Lesions of the Intestines."

DR. CLAUDE F. DIXON, Assistant Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Dinner Intermission

7:00 P.M.

Address: "Recent Advances in the Field of Abdominal Surgery."

MR. W. HUGH COWIE ROMANIS, F.R.C.S., Surgeon to St. Thomas Hospital, London, England.

Address: "The Influence of Drugs upon the Physiology of the Failing Heart."

DR. MAURICE B. VISSCHER, Professor of Physiology and Head of the Department, University of Minnesota Medical School, Minneapolis, Minn.

Address: "The Mechanism and Treatment of Congestive Heart Failure."

DR. TINSLEY R. HARRISON, Associate Professor of Medicine, Vanderbilt University School of Medicine, Nashville, Tenn.

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Address: "The Diagnostic Significance of Abdominal Pain."

DR. FREDERICK J. KALTEYER, Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.

Address: "Carcinoma of the Stomach."

DR. WALTMAN WALTERS, Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address: "Chronic Prostatitis."

DR. CYRUS E. BURFORD, Professor of Urology, St. Louis University School of Medicine, St. Louis, Mo.

Tuesday, October 19

8:00 A.M.

Diagnostic Clinic: "The Effects of General Infection on the Nervous System of Children."

DR. BRONSON CROTHERS, Assistant Professor of Pediatrics, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic: "Spastic Paralysis."

DR. ALAN DEFOREST SMITH, Clinical Professor of Orthopedic Surgery, Columbia University College of Physicians and Surgeons, New York, N. Y.

Diagnostic Clinic: (Subject to be supplied).

DR. DEAN D. LEWIS, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Intermission to Review Exhibits

Diagnostic Clinic: "Pitfalls in the Diagnosis of Acute Abdominal Conditions."

DR. ALTON OCHSNER, Professor of Surgery, Tulane University of Louisiana School of Medicine, New Orleans, La.

Diagnostic Clinic: "Various Types of Edema and Their Treatment."

DR. DAVID P. BARR, Busch Professor of Medicine, Washington University School of Medicine, St. Louis, Mo.

Noon Intermission

1:00 P.M.

Diagnostic Clinic: "The Management of Compound Fractures of the Extremities."

DR. JOHN J. MOORHEAD, Professor of Clinical Surgery, New York Postgraduate Medical School, Columbia University, New York, N. Y.

Address: "Migraine."

DR. THOMAS CECIL HUNT, St. Mary's Hospital, London, England.

Address: "Cicatrizing Enteritis—A Neglected Clinical Entity."

DR. ELLIOTT C. CUTLER, Moseley Professor of Surgery, Harvard University Medical School, Boston, Mass.

Intermission to Review Exhibits

Address: "The Problem of Ocular Tuberculosis." The Joseph Schneider Foundation Presentation.

DR. ALAN C. WOODS, Acting Professor of Ophthalmology, Johns Hopkins University School of Medicine, Baltimore, Md.

Address: "Combined Abdomino-perineal Resection for Carcinoma of the Rectum."

DR. THOMAS E. JONES, Cleveland Clinic, Cleveland, Ohio.

Address: "Early Diagnosis and Treatment of Cancer of the Cervix."

DR. JOHN R. FRASER, Professor of Obstetrics and Gynecology, McGill University Faculty of Medicine, Montreal, Canada.

Address: (Subject to be assigned).

DR. MARION L. KLINEFELTER, St. Louis, Missouri.

Dinner Intermission

7:00 P.M.

Address: "Growth Disturbances of the Pelvis and Femur Resulting from Diseases of the Hip Joint."

DR. DALLAS B. PHEMISTER, Professor of Surgery, University of Illinois College of Medicine, Chicago, Ill.

Address: "The Post Hoc Ergo Propter Hoc Fallacy in Medicine."

DR. ROBERT D. RUDOLF, Professor Emeritus of Therapeutics, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: "Allergy as Related to the Otolaryngologist."

DR. HAROLD G. TOBEY, Boston, Massachusetts.

Address: "Newer Methods in the Medical Treatment of Peptic Ulcer."

DR. HORACE W. SOPER, St. Louis, Missouri.

Address: "Subdural Hematoma."

DR. ERIC OLDBERG, Professor of Neurology and Neurological Surgery, University of Illinois College of Medicine, Chicago, Ill.

Address: "Toxemias of Pregnancy."

DR. NICHOLSON J. EASTMAN, Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore, Md.

Wednesday, October 20

8:00 A.M.

Diagnostic Clinic: "Hay Fever."

DR. J. HARVEY BLACK, Professor of Preventive Medicine, Baylor University College of Medicine, Dallas, Texas.

Diagnostic Clinic: "Newer Methods of Vascular Surgery."

DR. WAYNE BABCOCK, Professor of Surgery and Clinical Surgery, Temple University School of Medicine, Philadelphia, Pa.

Diagnostic Clinic: "Bronchiectasis and Certain Phases of Tuberculosis."

DR. CHARLES R. AUSTRIAN, Associate Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, Md.

Intermission to Review Exhibits

Diagnostic Clinic: "Dyspepsia, Organic Reflex and Functional."

DR. WALTER C. ALVAREZ, Professor of Medicine, University of Minnesota, The Mayo Foundation, Rochester, Minn.

Diagnostic Clinic: "Syphilis of the Central Nervous System."

DR. LEON H. CORNWALL, Associate Professor of Neurology, Columbia University College of Physicians and Surgeons, New York, N. Y.

Noon Intermission

1:00 P.M.

Diagnostic Clinic: "Abdominal Pain."

DR. IRVIN ABELL, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky.

Address: "Drugs in the Treatment of Heart Disease."

DR. ROBERT L. LEVY, Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons, New York, N. Y.

Address: "Diagnosis and Treatment of Brain Abscess."

DR. WALTER E. DANDY, Adjunct Professor of Neurological Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Intermission to Review Exhibits

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Address: (Subject to be supplied).

DR. CHARLES H. MAYO, Mayo Clinic, Rochester, Minn.

Address: "X-ray Treatment of the Pituitary Gland."

DR. MERRILL C. SOSMAN, Assistant Professor of Roentgenology, Harvard University Medical School, Boston, Mass.

Address: "Water Balance in Surgical Patients with Special Reference to Pre-and Post-operative Management."

DR. FREDERICK P. COLLIER, Professor of Surgery, University of Michigan Medical School, Ann Arbor, Mich.

Address: "Anxiety States in General Practice."

DR. WILLIAM J. KERR, Professor of Medicine, University of California Medical School, San Francisco, California.

### Assembly Dinner

For members of the profession, their ladies and friends.

Informal

7:00 P.M.

DR. JOHN F. ERDMANN, Master of Ceremonies.

Addresses by eminent members of the profession and other distinguished citizens of the world.

Thursday, October 21

8:00 A.M.

Diagnostic Clinic: "Cirrhosis of the Liver."

DR. CHARLES A. ELLIOTT, Professor of Medicine, Northwestern University School of Medicine, Chicago, Ill.

Diagnostic Clinic: "Factors to be Considered in the Diagnosis of Diseases of the Genito-Urinary Tract."

DR. WILLIAM E. LOWER, Cleveland Clinic, Cleveland, Ohio.

Diagnostic Clinic: "Nephritis."

DR. JONATHAN C. MEAKINS, Professor of Medicine, McGill University Faculty of Medicine, Montreal, Canada.

Intermission for Review of Exhibits

Diagnostic Clinic: "Post-Operative Fistulae with Special Reference to the Gall-Bladder."

DR. JOHN F. ERDMANN, Attending Surgeon, New York Postgraduate Hospital and Medical School, Columbia University, New York, N. Y. President, Inter-State Post Graduate Medical Association.

Diagnostic Clinic: "The Relation of Diabetes to Arteriosclerosis."

DR. ELLIOTT P. JOSLIN, Clinical Professor of Medicine, Harvard University Medical School, Boston, Mass.

Noon Intermission

1:00 P.M.

Address: "A New Approach to the Treatment of Peptic Ulcer."

MR. WILSON HEY, F.R.C.S., Surgeon, Manchester Royal Infirmary, Manchester, England.

Address: (Subject to be supplied).

DR. WILLIAM J. MAYO, Mayo Clinic, Rochester, Minn.

Address: "The Adherent Posterior Duodenal Ulcer."

DR. J. WILLIAM HINTON, Associate Professor of Clinical Surgery, New York Postgraduate Medical School, Columbia University, New York, N. Y.

Address: "The Prevention and Treatment of the Exanthemata."

DR. JOHN A. TOOMEY, Associate Professor of Pediatrics, Western Reserve University School of Medicine, Cleveland, Ohio.

Intermission to Review Exhibits

Address: "High Saphenous Ligations Plus Injection for Varicose Veins of the Leg."

DR. WILLIAM D. HAGGARD, Professor of Surgery, Vanderbilt University School of Medicine, Nashville, Tenn.

Address: "Endocarditis."

DR. RALPH A. KINSELLA, Professor of Internal Medicine, St. Louis University School of Medicine, St. Louis, Mo.

Address: "Recent Advances in Hormone Therapy as Applied to Gynecological Problems."

DR. EMIL NOVAK, Associate in Gynecology, Johns Hopkins University School of Medicine; Associate Professor of Obstetrics, University of Maryland School of Medicine, Baltimore, Md.

Dinner Intermission

7:00 P.M.

Address: "The Surgical Treatment of Diverticulitis."

DR. FRED W. RANKIN, Lexington, Kentucky.

Address: "Diagnosis and Treatment of Displacements of the Uterus."

DR. WILLIAM H. VOGT, Director of the Department of Gynecology and Obstetrics, St. Louis University School of Medicine, St. Louis, Mo.

Address: "The Relation of the Development of the Child to the Endocrine System."

DR. CHARLES R. STOCKARD, Professor of Anatomy, Cornell University Medical College, New York, N. Y.

Address: "Indications for Exploratory Laparotomy."

DR. WILLIAM T. COUGHLIN, Professor of Surgery, St. Louis University School of Medicine, St. Louis, Mo.

Address: "Tumors of the Kidney."

DR. HERMAN L. KRETSCHMER, Clinical Professor of Surgery, Rush Medical College, University of Chicago, Chicago, Ill.

Friday, October 22

8:00 A.M.

Diagnostic Clinic: "Surgical Lesions of the Common and Hepatic Ducts."

DR. FRANK H. LAHEY, Director of Surgery, Lahey Clinic; Surgeon to the New England Baptist Hospital and the New England Deaconess Hospital, Boston, Mass.

Diagnostic Clinic: "The Diagnosis and Management of Cardiac Arrhythmias."

DR. ROY W. SCOTT, Professor of Clinical Medicine, Western Reserve University School of Medicine, Cleveland, Ohio.

Diagnostic Clinic: "Chest Surgery."

DR. EVARTS A. GRAHAM, Bixby Professor of Surgery, Washington University School of Medicine, St. Louis, Mo.

Intermission for Review of Exhibits

Diagnostic Clinic: "The Medical Treatment of Arthritis."

DR. CYRUS C. STURGIS, Professor of Internal Medicine, University of Michigan Medical School, Ann Arbor, Mich.



## PROCEEDINGS—MINNESOTA ACADEMY OF MEDICINE

Diagnostic Clinic: "Diagnosis and Management of Diseases of the Thyroid Gland."

DR. GEORGE CRILE, Cleveland Clinic, Cleveland, Ohio.

Noon Intermission

1:00 P.M.

Address: "The Surgical Treatment of Arthritis."

DR. PHILIP D. WILSON, Clinical Professor of Orthopedic Surgery, Columbia University College of Physicians and Surgeons, New York, N. Y.

Address: "Diet of Infants."

DR. CHARLES HENDEE SMITH, Professor of Pediatrics, University and Bellevue Hospital Medical College, New York, N. Y.

Address: "The Relation of the Pituitary, Thyroid, Adrenals, Liver, and Pancreas to Hyperinsulinism and Spontaneous Hypoglycemia."

DR. SEALE HARRIS, Professor Emeritus of Medicine, University of Alabama School of Medicine, Birmingham, Ala.

Address: "Relief of Intractable Pains by Subarachnoid Alcohol Injections, Nerve Blocks, Root Sections, and Chordotomy."

DR. W. McK. CRAIG, Professor of Neurosurgery, University of Minnesota Graduate School of Medicine, Mayo Foundation, Rochester, Minn.

and

DR. ALFRED W. ADSON, Professor of Neurosurgery, University of Minnesota Graduate School of Medicine; Senior Neurosurgeon of Mayo Clinic, Rochester, Minn.

Intermission for Review of Exhibits

Address: "Diagnosis and Treatment of Pneumonia."

DR. RUSSELL L. CECIL, Professor of Internal Medicine, New York Polyclinic Medical School and Hospital, New York, N. Y.

Address: "The Significance of Hoarseness and Local Discomfort in Laryngeal Disease."

DR. GABRIEL TUCKER, Professor of Clinical Bronchoscopy and Esophagoscopy, University of Pennsylvania School of Medicine, and Professor of Bronchoscopy and Laryngeal Surgery, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa.

Address: "The Surgery of Hermaphroditism and associated Adrenal Diseases."

DR. HUGH H. YOUNG, Professor of Urology, Johns Hopkins University School of Medicine, Baltimore, Md.

Address: "The Menace of Post-Operative Adhesions."

DR. FRED W. BAILEY, St. Louis, Missouri.

### SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The Southern Minnesota Medical Association elected Dr. Albert E. Meinert of Winona president for the coming year; Dr. W. A. Fansler of Minneapolis, first vice president; Dr. Albert Fritsche of New Ulm, second vice president; and Dr. Nelson W. Barker of Rochester, secretary-treasurer.

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of May 12, 1937

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, May 12, 1937. The meeting was called to order at 8 p. m. by the president, Dr. E. M. Jones. There were fifty-one members and one guest present.

The scientific program followed.

### TUMORS OF THE JEJUNUM

JAMES A. JOHNSON, M.D.

Minneapolis

#### Abstract

Tumors of the jejunum, both malignant and benign, are comparatively rare. Carter states that malignant tumors of the jejunum comprise approximately 1 per cent of all of those occurring in the gastro-intestinal tract. Benign growths are likewise rare and consist chiefly of adenomas, myomas and angiomas. Textbooks on surgery contain very little, if anything at all, on this subject except to mention that they are very rare. In 1927 Hellstrom reported seventy-three cases of cancer of the small bowel but did not mention their location. In 1936 Nettrour, Webber and C. W. Mayo found only thirty-one cases of carcinoma of the jejunum in the files of the Mayo Clinic. Geschickter, from the Surgical

Pathologic Laboratory of Johns Hopkins, reported thirty-nine cases of benign tumors of the small bowel with sixteen cases of carcinoma, four of which were in the jejunum. In the University of Minnesota Pathologic Laboratory files were found only two cases of cancer of the jejunum in a total of 20,000 complete autopsies in adults. In reviewing case reports, it is evident that many of these growths occur very near the ligament of Treitz and become a difficult surgical problem. It is my purpose, therefore, to discuss in particular the surgical treatment and to report four operated cases with successful termination.

There are three types of carcinomata of the jejunum: (1) the constricting or stenosing type, (2) the flat ulcerating type, and (3) the polypoid type. Sarcoma may arise from the submucous, muscular or subserous coats and tends to assume an external growth, either solid, but more often cystic, with areas of degeneration. Benign tumors consist chiefly of adenomas, single or multiple, which are not infrequently responsible for intussusception. The symptoms are of an indefinite nature, often consisting of vague gastric distress with weakness, loss of weight and fatigue. If the growth progresses to stenosis, there is of course evidence of high intestinal obstruction. Diagnosis is difficult and depends upon the amount of obstruction present. Ob-

struction in this locality, if marked, may produce some dilatation of the proximal loop of the duodenum or jejunum and this dilatation may become an important x-ray finding. If there is a stenosing growth, it can be recognized as well here as in any other portion of the bowel. Very few cases, however, are diagnosed before operation.

If complete obstruction has been present for some time, it is important to prepare the patient before operation is undertaken. This can best be done by emptying the stomach with nasal suction and administering glucose and saline intravenously. If anemia is pronounced, a blood transfusion should be given. The operation consists of thorough removal of the growth, together with proper restoration of function by an end-to-end or side-to-side anastomosis. This is not especially difficult when the tumor is located far enough down so that a side-to-side anastomosis can be done. When it is located at or so near the ligament of Treitz that this becomes impossible, the restoration of the lumen often becomes a difficult problem, because the proximal loop is usually very dilated and so edematous that an end-to-end anastomosis cannot be done. R. Franklin Carter, in the *Annals of Surgery* for December 1935, recommends a side-to-side anastomosis of the distal end of the jejunum to the third portion of the duodenum. This appeals to me as a splendid procedure but it may be difficult in some instances, particularly where the duodenum is not much dilated.

I wish to present here another method. Recently I encountered an annular carcinoma of the jejunum, located so near the ligament of Treitz that only a small stump of the proximal loop remained when the growth was adequately removed. The proximal loop was so dilated and hypertrophied that an end-to-end anastomosis could not be done. I decided to employ a large, round Murphy button. This was easily inserted and was reinforced by two layers of catgut in the serosa and muscularis, thus producing a tight, secure, end-to-end enclosure. The postoperative convalescence was uneventful. The patient has no symptoms and shows no evidence of obstruction by x-ray at present, and has regained his normal weight. I recommend this method in cases where the tumor is located so near the ligament of Treitz that a side-to-side anastomosis is impossible or when the proximal loop is so dilated and edematous that an end-to-end union becomes unsafe.

The immediate operative mortality in removing tumors from the jejunum is high. Hellstrom in 1927 reported a primary mortality in resected cases of 36.2 per cent. R. Franklin Carter in 1935 reviewed thirty cases, twenty-four of which had resections with a primary mortality of 43.4 per cent. The mortality was highest in those in which an end-to-end anastomosis was done.

*Case 1.*—On February 27, 1935, I was called in consultation by Dr. H. W. Quist, to see Mrs. G. H., aged thirty-five, who had been admitted to the hospital February 23 with a severe attack of upper abdominal pain which was thought to be gallstones. She had had previous attacks. She continued to vomit, however, and a couple of days later she passed a bloody stool. On the

same day a mass was felt in the left upper abdomen. A small amount of barium was given and showed a dilatation of the duodenum and jejunum. An obstruction in the jejunum was diagnosed and operation was advised. At operation, about 4 inches below the ligament of Treitz there was an intussusception of gangrenous bowel. A resection was done with side-to-side anastomosis. On opening the bowel a papillary growth with a necrotic polyp was located on the bowel wall. Pathological report showed that this was an adenomatous non-malignant growth. She was given a blood transfusion and had an uneventful recovery and has been well to date.

*Case 2.*—Mr. G. F., aged sixty-three, gave a negative past history. His present trouble dates back about one and a half years, during which time he had had indefinite symptoms of indigestion with epigastric distress. He had lost 40 pounds in weight. He had previously had two x-ray studies of his stomach elsewhere and a diagnosis of duodenal ulcer had been made. Treatment had been given without any relief. He was admitted to the Eitel Hospital on September 13, 1936. X-rays of the gastrointestinal tract revealed considerable dilatation of the duodenum, which extended to about 3 inches beyond the ligament of Treitz, at which point an annular constricting growth was located, and Dr. Ude made a diagnosis of carcinoma of the jejunum with partial obstruction. Operation on September 18, 1936, revealed a large, annular carcinoma of the jejunum three and one-half inches from the ligament of Treitz. The growth was almost completely obstructing the bowel. The proximal loop was much dilated and edematous. The mesenteric glands were involved. The growth was widely resected and an end-to-end anastomosis was made with a large round Murphy button. His convalescence was uneventful. He has regained his normal weight and has no symptoms. Pathologic report by Dr. O'Brien revealed adenocarcinoma of the jejunum with metastasis of the regional lymph nodes.

*Case 3.*—Mrs. L. B., aged fifty-seven, had been treated for secondary anemia for the past eighteen months. She had had during the past year two attacks of abdominal distention with cramps lasting for two days. After the first attack in April, 1936, she felt a mass in the left lower abdomen. The last attack in September was severe. She consulted her family physician, Dr. Oliver Porter, who immediately sent her in for examination. There was a movable mass in the left abdomen which, when the patient was lying down, could be felt in the upper abdomen and when the patient was standing could be felt below the navel. A barium enema was given. There was no evidence of any tumor in the colon. Operation October 15, 1936, at which time a large partly cystic tumor was found in the jejunum about 7 inches below the ligament of Treitz. There were metastases in the liver around the gallbladder. There were numerous glands in the mesentery involved. The growth was widely resected and a side-to-side anastomosis was done. Pathological report by Dr. O'Brien showed that the tumor was a sarcoma, presumably a neurosarcoma. Postoperative convalescence was uneventful. She has been in fair health and relieved of her previous symptoms.

*Case 4.*—Mrs. L. B., aged thirty-six, admitted to Eitel Hospital on January 8, 1937. There was a history of attacks since June, 1936, which consisted of dull pain in the region of the navel with epigastric distress. Attacks had gradually increased in severity and lasted about three hours. At various times she vomited. Between attacks she had much epigastric distress and feared to eat, losing 20 pounds in weight. X-rays of the gallbladder showed impaired function with a single stone. Gastro-intestinal x-ray showed a normal stomach and duodenum. There was also an irregular dis-

tribution of barium in the small bowel with some areas of dilatation and stasis. X-ray of the colon was normal. Operation January 22, 1937, revealed a thick-walled gallbladder, containing a solitary stone. Cholecystectomy was done. The entire bowel was then carefully examined. At a point about 4 feet from the ligament of Treitz there was a movable mass in the bowel. The bowel was opened and an ulcerating adenoma was exposed, which looked malignant. The growth was resected and a side-to-side anastomosis was done. Pathologic report by Dr. O'Brien showed no evidence of malignant changes but revealed a large polyp with ulceration. Convalescence was uneventful. She has been relieved of all her previous symptoms and regained her normal weight.

### Summary

1. Tumors of the jejunum probably comprise about 1 per cent of all those occurring in the gastro-intestinal tract.
2. When an unexplained high obstruction is evident and no cause can be found in the pylorus or duodenum, it should be remembered that tumors may be present in the jejunum.
3. A simple, safe method of end-to-end anastomosis is here recommended in cases that are located so near the ligament of Treitz that the usual operative procedures are either too dangerous or impossible.

### Discussion

DR. A. R. COLVIN, Saint Paul: I just want to emphasize one point made by Dr. Johnson and which he has emphasized, i.e., in case of gastro-intestinal hemorrhage, if, at operation, the cause which has been suspected is not evident, to make a thorough search for causes which maybe have not been suspected.

I recently saw a patient who had an inoperable carcinoma of the jejunum. He had had several transfusions and finally a gastro-enterostomy, under the belief, evidently, that the hemorrhage was due to peptic ulcer. The autopsy revealed a carcinoma which had become spontaneously anastomosed with another coil and was clearly inoperable. The story of bleeding had extended over several years.

DR. ARNOLD SCHWYZER, Saint Paul: I want to congratulate Dr. Johnson for this group of interesting cases. These cases are rare and that he should have had four of them in a short time is quite an experience. I have seen only one and detected that one by accident. In the course of a gallstone operation we noticed a thickening which was rather circular in the lower duodenum or upper ileum. I resected and the patient recovered from the operation but gradually lost ground and later died from carcinoma.

This presentation was very good and the microscopic slides excellent. I am glad the Murphy button has come into its own again. I have used the Murphy button every now and then right along and feel just as Dr. Johnson does, that where there is difficulty in suturing, the Murphy button will get you out of some tight places. However, when there is a large upper gut end and a smaller lower one, there is great danger of the Murphy button staying there for a long time. For such a case I have a Murphy button on which the two halves are a little different in size. The half with the smaller diameter is put in the upper gut and the larger one into the lower gut. If I do not feel quite safe as to the union on account of tension, I make an invagination stretching the lower narrower part of gut over the button for half an inch or one inch above and secure it there with a couple of continuous or interrupted sutures. Then I know the button must go down. I think that is a worthwhile point.

DR. JOHN NOBLE, Saint Paul: I am rather hesitant to discuss the question of malignancy of the small intestines because of my meager first-hand experience. I feel that statistics on the matter of frequency have perhaps been distorted and I am perfectly in agreement with Dr. Johnson as far as these figures are concerned. Yet, in my experience, I have seen only three cases of malignancy of the small intestine. The first case was a gelatinous carcinoma of the duodenum; the second case was a liomyoma-sarcoma of the jejunum and the third case was mentioned by Dr. Colvin. I think the discrepancy in statistics may be due to the fact that the case reports of malignancy of the small intestine are more likely to be published than are reports of carcinoma of the stomach, for instance. In the first case mentioned, the patient's condition warranted no surgical interference. The second case presented a picture of low-grade chronic partial intestinal obstruction. Efforts were made to localize the point of obstruction but these were unsuccessful and the patient died before any surgical exploration could be done. This tumor proved to be a liomyoma-sarcoma situated in the jejunum. I know this type of tumor is usually benign and that it is the most common tumor found in the stomach. It also occurs in the small intestine, however, and in this instance the lesion was malignant. Here, there was definite evidence of local invasion but no distant metastases were found. The third case was the one Dr. Colvin mentioned. The picture was that of a high intestinal obstruction and the patient had had previous gastric surgery. The tumor at autopsy was found to be adenocarcinoma of the jejunum, in which, due to adhesions and infiltration of the several loops of the small intestine, anatomoses had occurred. The lesion was grossly mistaken for an inflammatory mass and not until microscopic sections were studied was it discovered that the lesion was adenocarcinoma. In none of the three cases was clinical diagnosis made. These are the only three cases I have seen first-hand. Recently, I have been impressed with the newer methods in the x-ray diagnosis of tumors of the small intestine and I feel that as this technic is developed we will be able to diagnose these lesions more frequently and that our accuracy will be somewhat comparable to the diagnosis of the lesions in the stomach and colon.

DR. R. G. ALLISON, Minneapolis: X-ray diagnosis of tumors of the small intestine can readily be made, with even a mild degree of obstruction, by a barium meal. In cases which present themselves with symptoms of obstruction, a flat film of the abdomen should always be made as a preliminary measure. If dilated loops of small bowel are found, barium should not be administered. If, however, no dilated loops are found, it is perfectly safe to administer a barium and water mixture.

DR. JOHNSON, in closing: I want to thank the gentlemen for their interesting discussions. I would like to see the button Dr. Schwyzer has been using. I have used the Murphy button for many years and have never seen one that failed to pass. If such cases have been reported, it is quite probable that the button has been defective or inserted wrong; the male portion of the button should always be inserted in the proximal loop. During the four years I was with Dr. Murphy, I never saw him use anything but a button for gastro-enterostomy except in a case of a small child. They all passed without any difficulty. The button usually comes loose in about ten days and then passes so silently that the stool has to be watched carefully to recover it. The button used in this case was so large that it became lodged in the rectal pouch. I have never before had to remove one.

Tumors of the jejunum, of course, are a rare condition, but I want to leave with you two thoughts con-

cerning them. First, if a patient is being operated on for a lesion in the pylorus or duodenum, especially of an obstructing type, and none is found, it would be well to remember that it might be in the jejunum and, accordingly, do not forget to explore it. Second, if one is confronted with a difficult anastomosis in the small bowel, such as occurs at or very near the ligament of Treitz, it is well to remember that a Murphy button can often be used to advantage.

# ADAMANTINOMA WITH CYST OF LOWER JAW

A. R. COLVIN, M.D.

*Saint Paul*

An enumeration of the various names given to adamantinoma is an indication of the direction in which a knowledge of these tumors has developed.

1. Epithelioma adamantinoma
2. Central epithelioma
3. Cystoma
4. Multilocular cystoma
5. Proliferating cysts of the jaw
6. Embryo-plastic adamantome
7. Central paradental cyst
8. Central cystadenoma
9. Central papilloma of the jaw
10. Adamantine adenoma

At the present time they are designated "Solid Adamantinoma" and "Cystic Adamantinoma." In the early stages of their development they may be confused with root cysts or follicular cysts; in other words, they may present as small cysts.

These cysts have frequently been operated on under the belief that they were root cysts. This was my experience in the case I am reporting, except that I operated on a cyst twice before recognizing the real nature of the trouble. Because of the, at times uncertain, nature of the behavior of these tumors, I am reporting a case demonstrating the long-drawn-out history and apparently benign course. They are almost always found in the lower jaw and have their origin from the germ cells of the enamel epithelium or from the epithelial remnants of this structure. They grow slowly and distend the jaw more than they destroy it. They may involve the entire half of the jaw, and, while usually possessing all the characteristics of a benign tumor, they must often be treated as malignant because of the continuous growth of tumor cells remaining after incomplete removal. Heath reported a case recurring, after thirty-five years, and one case has been reported as recurring after forty-five years. They may appear at any time of life. Perthes says they never metastasize. Ludek reports a case with undoubted metastases in the lung. Adamantinoma may vary greatly in size; at times growing as large as a child's head.

Histologically, there is seen a large amount of connective tissue stroma in which are found epithelial cords and islands resembling the structures found in the germ cells of the enamel of the tooth follicle. This arrangement is found in the walls of the cysts as well as in the solid tumors.

Differential diagnosis is uncertain not only in the early stages of root cysts and follicular cysts, but also in later stages. The central fibroma presents difficulties not only clinically but also radiographically. The x-ray is important not only for diagnosis but to establish an accurate plan of operative procedure as possible so that, because of the great tendency to recurrence, it can be determined whether it may not be advisable to operate radically and still leave a sufficient ridge of the lower border to maintain the form and support of the jaw. Recurrences may, however, be a long time delayed (forty-five years) and so it may be advisable to remove all suspicious tissue before resorting to exarticulation, and observe the case frequently for recurrences, hoping that they may be long delayed.

I wish to report the following case of adamantinoma:

The patient, a female aged forty-two, was first seen in 1921 with a history of a painless lump in her lower jaw. Believing this to be either a root or follicular cyst, it was operated by removing the outer wall and curetting out the lining membrane. For a recurrence in 1923 the same procedure was carried out. In 1926, at operation for another recurrence in which the cyst was clinically about the size of an almond nut, on removing the outer wall there were now found several smaller cysts. These were opened in such a manner that an open cavity was made. This healed over, but recurrence took place about one year later (1/12/28). At this time an incision was made in the submaxillary region and the cyst exposed extra-orally. The outer wall was removed, revealing a multilocular cyst. Cavities extending from the lower end of the ascending ramus forward to the lateral incisor were found, and these cyst walls were removed with burr and curette.

In November, 1929, another recurrence was evident and again the bone was approached in the same manner; the lateral incisor, canine and bicusps were removed and, with rongeur forceps and burr, the bone was removed leaving only a ridge of the lower margin of the jaw about half an inch thick.

It is now seven years since this was done and there is no evidence of recurrence at this time.

Osteitis fibrosa, and bone granuloma or osteodystrophia fibrosa beginning in the central part of the jaw, of doubtful origin, and consisting of at first loose and later much firmer fibrous tissue, presents difficulties in diagnosis also; and histological examination must in all of these conditions furnish the deciding evidence in the differentiation from adamantinoma and, indeed, from all tumors of the jaw. In this connection, to illustrate the difficulties of diagnosis and the necessity for making use of every form of information to be gained from clinical, radiographic, histological and the findings of gross pathology as exposed as operation, I would like to refer to the following case:

The patient, a female aged eighteen, first noticed a swelling of the gums over the upper jaw two years ago. This increased gradually for over a year. Two months ago she was hit over the left side of the face by a horse suddenly jerking its head in her direction. She says the swelling increased more rapidly since then. She had not at any time suffered any pain. There was marked fullness of the cheek on the left side; just above the lateral incisor was a firm elastic mass about the size of a walnut. There was a fullness of the left side of the hard palate.

At operation an incision was made over the prom-

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inent mass. After reflecting the mucous membrane, the mass was exposed and found to have destroyed the outer wall of the antrum. The tissue comprising the mass was of a very tough fibrous consistency and filled the entire antrum, so that, in removing it, it was found that the walls of the antrum in various places were destroyed; and on attempting to remove all of the tissue comprising the mass, one felt that this tissue became part of the wall very much like the insertion of the larger tendons. It soon became apparent that if the tissue was malignant (which it did not seem to be), and, having perforated the walls of the antrum in various places so that its complete removal was impossible, radical resection of the upper jaw would still fail to remove all diseased tissue; and if it were not malignant further damage to the adjacent structures (the contents of the orbit, for instance) was inadvisable. Recovery from the operative attack was uneventful and she was given x-ray treatment. When seen a few weeks ago there were no clinical evidences of recurrence. A radiograph still shows a dense shadow in the antral region.

**Pathological Report (DR. JOHN NOBLE):** "The specimen consists of a large mass of small, irregular fragments of tissue of varying size all of which have about the same gross appearance and structure. There appears to be an outer, quite friable, papillary surface and central portion which is quite fibrous and tough in consistency. It cuts with increased resistance. All of the tissues present the same gross appearance.

"Microscopic: Sections of the tumor of the antrum and maxilla show it to be composed of masses of dense hyaline connective tissue showing large amounts of collagen fibril. The bulk of the tumor is composed of this tissue but there are some small areas of connective tissue which are somewhat more cellular. Throughout the stroma small spicules of bone and osteoid tissue are scattered at irregular intervals. There is no evidence of epithelial tissue and no evidence of malignancy is seen. From the gross picture and from previous experience with similar lesions in other bones, a very guarded prognosis should be given, however. The histologic picture is that of an osteitis fibrosa of the solid type."

Diagnosis: Osteitis fibrosa.

The conditions described above conform more nearly to the condition defined as "bone granuloma" and, while isolated cases have been reported, it is still unsettled as to whether it is of inflammatory or neoplastic nature. Pertines comments on the fact that it has not previously been described in systematic treatises of the jaw and that in the former edition of his own work it was not referred to; but now, in his newest work, he is evidently endeavoring to arrange some of these conditions under the heading of "Granuloma" or "Osteodystrophia Fibrosa." With all of these facts in mind, one would scarcely have been justified in doing more than was done in this case.

### Discussion

DR. JOHN NOBLE, Saint Paul: These two cases reported by Dr. Colvin have been interesting to me, particularly the second one. In the first case I studied only the sections and, as shown on the lantern slides, the tumor was adamantinoma. These tumors arise from the peridental epithelium and they take on various

forms. The tumor can present a picture similar to the one shown forming numerous cysts, or it can be a solid adenocarcinoma. Squamous cell tumors are also seen and one form is indistinguishable from a sarcoma, being composed of spindle cells. These tumors are characteristically slow growing and the difficulty from the standpoint of surgical treatment is the matter of complete removal. They frequently recur but seldom metastasize. Distant metastases have, however, been reported in lung and cervical lymph nodes. The second case I saw clinically with Dr. Colvin. She was a young girl and the tumor from an x-ray standpoint was malignant. As far as could be determined, the tumor arose from the antrum or the maxilla. It invaded the walls of the antrum and the orbit. We came to the conclusion, after microscopic study of the tumor, that it was an osteitis fibrosa of the solid type. In long bones we know that this lesion occurs in two forms—the cystic and the solid type. This lesion resembled more closely the solid type but had none of the giant cells so frequently seen. We know that osteitis fibrosa may take one of three courses. It has been known to subside without any therapy. It can be eradicated by curetting the cysts. The lesion is closely related to giant cell tumors of the bone and malignant changes have been reported following this type of lesion. The thing that interested me particularly in this case was the matter of the fundamental etiology of the disease. Did it represent a true neoplasm or was the lesion simply a proliferative inflammation? We know that chronic inflammatory processes in the antrum are extremely frequent. This type of reaction to inflammation must be very rare. The fact that bone destruction occurred need not be evidence against the inflammatory nature of the lesion. We know that certain proliferative inflammatory processes of the bone can be destructive. It will be interesting to follow the eventual outcome in this instance.

DR. R. G. ALLISON, Minneapolis: The case Dr. Colvin exhibits, with involvement of the antrum, gives the characteristic x-ray appearance of a malignant lesion. I think it extremely rare to see chronic involvement of the antrum progress either to destruction of bone or to a wide-spread osteomyelitis. These tumors are much more common in the lower jaw.

DR. KENNETH BULKLEY, Minneapolis: In connection with this case of Dr. Colvin's, I would like to report a case of adamantinoma of the lower jaw which went on eventually to death. The man was a first cousin of Dr. Janeway and a brother-in-law of mine. Shortly after graduation from medical school he developed a mass in the lower jaw. He was operated on three times, each time with recurrence, and perhaps two or three years between each recurrence. Finally he went to Baltimore and saw Dr. Bloodgood who did a resection of the lower jaw. The laboratory diagnosis was made in this case by Dr. Ewing. This man lived to be about fifty-four. He eventually developed local extension into the nasopharynx and a trifacial neuralgia for the relief of which Dr. Harvey Cushing operated on the gasserian ganglion. The process finally extended through the base of the skull with secondary infection and meningitis. This was a typical case of adamantinoma which continued over a period of twenty-five years after the first local incision in the lower jaw.

The meeting adjourned.

A. G. SCHULZE, M.D., *Secretary*

## BOOK REVIEWS

Books listed here become the property of the Ramsey and Hennepin County Medical libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

**TREATMENT BY DIET.** Clifford J. Barborka, B.S., M.S., M.D., D.Sc., F.A.C.P. Department of Medicine, Northwestern University Medical School, Chicago, etc. Third Edition. 642 pages. Illus. Price, \$5.00, cloth. Philadelphia: J. B. Lippincott Co., 1937.

**MANUAL OF THE DISEASES OF THE EYE.** For Students and General Practitioners. Charles H. May, M.D. Consulting Ophthalmologist to Bellevue, Mt. Sinai and French Hospitals, New York; formerly Chief of Clinic and Instructor in Ophthalmology, Medical Department Columbia University, etc. 15th Edition. 498 pages. Illus. Price, \$4.00, cloth. Baltimore: Wm. Wood & Co., 1937.

**AN INTRODUCTION TO DERMATOLOGY.** Richard L. Sutton, M.D., Sc.D., LL.D., F.C.S. (Edin.), Professor of Dermatology, University of Kansas School of Medicine, and Richard L. Sutton, Jr., A.M., M.D., L.R.C.P. (Edin.), Instructor in Dermatology, University of Kansas School of Medicine. Third Edition. 666 pages. Illus. Price, \$5.00, cloth. St. Louis: C. V. Mosby Co., 1937.

**OBSTETRIC AND GYNECOLOGIC NURSING.** Frederick H. Falls, M.S., M.D., F.A.C.S., Professor of Obstetrics and Gynecology, University of Illinois College of Medicine, etc., and Jane R. McLaughlin, B.A., R.N., Supervisor of Department of Obstetrics and Gynecology, Research and Educational Hospital, University of Illinois College of Medicine. 492 pages. Illus. Price \$3.00, cloth. St. Louis: C. V. Mosby Co., 1937.

**THE LABORATORY DIAGNOSIS OF SYPHILIS.** Harry Eagle, M.D., Past Asst. Surg. U. S. Public Health Service, Washington, D. C.; Lecturer in Medicine, Johns Hopkins University Medical School, Baltimore, Md. 440 pages. Illus. Price, \$5.00. St. Louis: C. V. Mosby Co., 1937.

"The Laboratory Diagnosis of Syphilis" presents a detailed and practical consideration of the various diagnostic tests on syphilitic blood and spinal fluid and is of special interest to serologists and immunologists. The text begins with a brief general discussion of the serologic tests and the terms used in describing them.

Seven chapters are then spent in discussion of the Wassermann reaction alone. The properties, preparation and standardization of complement, antigen, serum, and the hemolytic system are given. The mechanism of the test, the sources of error in performing it and the relative merits of various types of Wassermann technics are discussed in a scholarly manner. Of particular interest to laboratories is the chapter in which three Wassermann technics are carefully outlined.

Part II of the text is devoted to the flocculation tests for syphilis and a brief historical sketch of their

development is given. The procedures for seven modern flocculation tests are also stated (Eagle, Hinton, Kahn, Kline, Meinicke, Müller-Ballungs, Lentochoh and Citochoh, and Sachs-Georgi-Witebsky).

Adequate portions of the book are utilized for the discussion of spinal fluid examinations, and the clinical evaluation of serologic tests. In conclusion, a number of appendices include considerations of the daily routine in a large serologic laboratory, problems in the sero diagnosis of syphilis and other interesting features.

The book, of course, is of greater value to the laboratory worker than to the clinician. It is well written and there is no lack of detail.

CARL W. LAYMON, M.D.

**INFANTILE PARALYSIS AND CEREBRAL DIPLEGIA.** Methods used for the Restoration of Function. Elizabeth Kenny. With Foreword by Herbert J. Wilkinson, Professor of Anatomy and Dean of the Faculty of Medicine, University of Queensland. 125 pages. Illus. Price, £1/1/-, cloth. Sydney, Australia: Angus & Robertson, 1937.

While Sister Elizabeth Kenny is the author of the principal part of the text concerning anterior poliomyelitis and spastic paralysis of infants, Dr. Herbert J. Wilkinson, Anatomist, contributes a seventeen page Foreword and Dr. J. V. Guinane seven pages of "Introductory Notes."

In the Foreword it is stated that Sister Kenny . . . "is able to bring about improvement in many cases abandoned by the profession and has obtained more rapid improvement in early cases not previously treated"; and, furthermore: . . . "Sister Kenny is to be highly commended for her patient persistence over many years, but judgment of the complete merits of her work must be left to the future."

The author in her Preface states that before being received in the clinic the consent of the medical officer to supervise the case is required and a medical report on the condition of the patient is demanded at the end of four months. The Official Medical Investigator of the Queensland Government is reported to have investigated the methods and compared results with other methods. His conclusions were: (1) Infantile Paralysis: All recent cases treated at the Clinic have been totally and permanently cured. All long standing cases have been improved. (2) Cerebral Diplegia: Results were excellent, no other method could approach them.

The author suggests that exercise and hydrotherapy are the basis of treatment of both types of disorders. The general principles of treatment of infantile paralysis are noted as follows. (1) maintenance of a bright mental outlook; (2) maintenance of impulse; (3) hydrotherapy and remedial exercises; (4) maintenance of circulation; (5) avoidance of the generally accepted methods of immobilization.

Unfortunately, the material of the text is arranged rather unconventionally. After a perusal of the book, one is left somewhat bewildered—not wholly convinced.

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MINNESOTA MEDICINE